

Bibliography

- [1] Galcit 75 - program of the 75th anniversary of the founding of the graduate aeronautical laboratories. California Institute of Technology, Pasadena, California, November 2003. Joint project with Marionne Epalle and the Communications Office of the EAS Division with contributions by GALCIT faculty.
- [2] R. Akbar, M. Kaneshige, E. Schultz, and J.E. Shepherd. Detonations in $\text{H}_2\text{-N}_2\text{O-CH}_4\text{-NH}_3\text{-O}_2\text{-N}_2$ mixtures. Technical Report FM97-3, Graduate Aeronautical Laboratories, California Institute of Technology, July 1997.
- [3] R. Akbar and J.E. Shepherd. Detonation initiation and propagation within gas layers in water-filled piping. Technical Report FM2010-003, Graduate Aeronautical Laboratories, California Institute of Technology, August 2010.
- [4] Raza Akbar. *Mach Reflection of Gaseous Detonations*. PhD thesis, Rensselaer Polytechnic Institute, Troy, New York, August 1997.
- [5] K. Ando, T. Sanada, K. Inaba, J. S. Damazo, J. E. Shepherd, T. Colonius, and C. E. Brennen. Shock propagation through a bubbly liquid in a deformable tube. *Journal of Fluid Mechanics*, 671:339–363, 2011. Preprint, see journal for final version. <http://dx.doi.org/10.1017/S0022112010005707>.
- [6] M. Arienti, E. Morano, and J. E. Shepherd. Shock and detonation modeling with the Mie-Grüneisen equation of state. Technical Report FM99-8, Graduate Aeronautical Laboratories, California Institute of Technology, 1999. Revised version of 1999 draft report entitled “Nonreactive Euler flows with Mie-Grüneisen equation of state for High Explosives”.
- [7] M Arienti and JE Shepherd. Superseismic loading and shock polars: An example of fluid-solid coupling. In M. D. Furnish, Y. Horie, and N. N. Thadhani, editors, *Shock Compression of Condensed Matter – 2001: 12th APS Topical Conference*, pages 251–254. AIP, 2002. AIP Conference Proceedings 620.

- [8] M. Arienti and J.E. Shepherd. A numerical study of detonation diffraction. *J. Fluid Mech.*, 529:117 – 146, 2005. (Preprint - see journal for final version <http://dx.doi.org/10.1017/S0022112005003319>).
- [9] M. Arienti and J.E. Shepherd. The role of diffusion in irregular detonations. The 4th Joint Meeting of the US Sections of the Combustion Institute, Philadelphia, PA, March 20-23, 2005.
- [10] Marco Arienti. *A Numerical and Analytical Study of Detonation Diffraction*. PhD thesis, California Institute of Technology, Pasadena, California, December 2002.
- [11] Marco Arienti, Patrick Hung, Eric Morano, and Joseph E. Shepherd. A level set approach to Eulerian-Lagrangian coupling. *Journal of Computational Physics*, 185:213–251, 2003. (Preprint - see journal for final version [http://dx.doi.org/10.1016/S0021-9991\(02\)00055-4](http://dx.doi.org/10.1016/S0021-9991(02)00055-4)).
- [12] Marco Arienti and Joseph E. Shepherd. Spontaneous formation of strong and weak transverse waves in detonation diffraction. Extended abstract for 19th International Colloquium on the Dynamics of Explosions and Reactive Systems, Hakone, Japan, 27 July - August 1 2003.
- [13] J. M. Austin, M. Cooper, S. Jackson, E. Wintenberger, J. E. Shepherd, and B. Sturtevant. Small scale detonation studies: Direct impulse measurements for detonations and deflagrations. Technical Report FM00-5, Graduate Aeronautical Laboratories, California Institute of Technology, July 2000.
- [14] J. M. Austin, F. Pintgen, and J. E. Shepherd. Lead shock oscillation and decoupling in propagating detonations. 43rd AIAA Aerospace Sciences Meeting and Exhibit, January 10-13, 2005, Reno, NV, AIAA 2005-1170, 2005.
- [15] J. M. Austin, F. Pintgen, and J. E. Shepherd. Reaction zones in highly unstable detonations. In *Proceedings of the 30th Combustion Institute*, number 2, pages 1849–1857, 2005. doi 10.1016/j.proci.2004.08.157.
- [16] J. M. Austin and J. E. Shepherd. Detonation in hydrocarbon fuel blends. Technical Report FM99-6, Graduate Aeronautical Laboratories, California Institute of Technology, July 2000.
- [17] JM Austin and JE Shepherd. Detonation in hydrocarbon fuel blends. *Combustion and Flame*, 132(1-2):73–90, 2003. (Preprint - see journal for final version [http://dx.doi.org/10.1016/S0010-2180\(02\)00422-4](http://dx.doi.org/10.1016/S0010-2180(02)00422-4)).
- [18] Joanna Austin. *The Role of Instability in Gaseous Detonation*. PhD thesis, California Institute of Technology, Pasadena, California, June 2003. Appendix A is provided separately due to the length (52 Mb).

- [19] M.R. Baer and J.E. Shepherd. A thin-flame model for reactive flow in porous materials. Technical Report SAND83-2576, Sandia National Laboratories, 1983.
- [20] S. P. M. Bane, S. A. Coronel, P. A. Boettcher, and J.E. Shepherd. Statistical analysis of spark ignition of kerosene-air mixtures. 2011 Fall Meeting of the Western States Section of the Combustion Institute, Riverside, CA October 17-18, Paper 0271C-0201, 2011.
- [21] S. P. M. Bane, R. Mevel, S. Coronel, and J. E. Shepherd. Flame burning speeds and combustion characteristics of undiluted and nitrogen diluted hydrogen-nitrous oxide mixtures. *International Journal of Hydrogen Energy*, 36:10107–10116, 2011. Preprint, see journal for final version. <http://dx.doi.org/10.1016/j.ijhydene.2011.04.232>.
- [22] S. P. M. Bane, J. E. Shepherd, E. Kwon, and A. C. Day. Statistical analysis of electrostatic spark ignition of lean $H_2/O_2/Ar$ mixtures. *International Journal of Hydrogen Energy*, 36:2344–2350, 2011. Preprint, see journal for final version. <http://dx.doi.org/10.1016/j.ijhydene.2010.05.082>.
- [23] S. P. M. Bane, J. Ziegler, S. Coronel, and J. E. Shepherd. Experimental investigation of spark ignition energy in kerosene, hexane, and hydrogen. *Journal of Loss Prevention in the Process Industry*, 26(2):290–294, 2013. Preprint, available on line 3 April 2011. see journal for final version <http://dx.doi.org/10.1016/j.jlp.2011.03.007>.
- [24] Sally P. M. Bane. *Spark Ignition: Experimental and Numerical Investigation with Application to Aviation Safety*. PhD thesis, California Institute of Technology, Pasadena, California, May 2010. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [25] S.P. M. Bane, J. E. Shepherd, E. Kwon, and A. C. Day. Statistical analysis of electrostatic spark ignition of lean H_2-O_2-Ar mixtures. In *Proceedings of the 3rd International Conference on Hydrogen Safety. Ajaccio, Corsica, Sept 16-18, 2009.*, 2009.
- [26] S.P. M. Bane and J.E. Shepherd. Statistical analysis of electrostatic spark ignition. 2009 Fall Meeting of the Western States Section of the Combustion Institute University of California at Irvine, Irvine, CA October 26 & 27, Paper 09F-64, 2009.
- [27] S.P.M. Bane, J.L. Zeigler, and J.E. Shepherd. Investigation of the effect of electrode geometry on spark ignition. *Combust. Flame*, 162:462–469, 2015. Preprint, see journal for final version. <http://dx.doi.org/10.1016/j.combustflame.2014.07.017>.
- [28] S.P.M. Bane, J.L. Ziegler, and J.E. Shepherd. Development of one-step chemistry models for flame and ignition simulation. Technical Report FM2010-002, Graduate Aeronautical Laboratories, California Institute of Technology, March 2010.

- [29] J. Belanger, M. Kaneshige, and J.E. Shepherd. Detonation initiation by hypervelocity projectiles. In B. Sturtevant, J.E. Shepherd, and H.G. Hornung, editors, *Proceedings of the 20th International Symposium on Shock Waves*, volume 2, pages 1119–1124. World Scientific, 1996.
- [30] W.M. Beltman, E. Burcsu, J.E. Shepherd, and L. Zuhal. The structural response of cylindrical shells to internal shock loading. *Journal of Pressure Vessel Technology*, 121(3):315–322, 1999. (Preprint - see journal for final version <http://dx.doi.org/10.1115/1.2883709>).
- [31] W.M. Beltman and J.E. Shepherd. Structural response of shells to shock and detonation loading. Technical Report FM98-3, Graduate Aeronautical Laboratories, California Institute of Technology, April 1998.
- [32] W.M. Beltman and J.E. Shepherd. Linear elastic response of tubes to internal detonation loading. *Journal of Sound and Vibration*, 252(4):617–655, 2002. (Preprint - see journal for final version <http://dx.doi.org/10.1006/jsvi.2001.4039>).
- [33] N. P. Bitter. *Stability of Hypervelocity Boundary Layers*. PhD thesis, California Institute of Technology, Pasadena, California, May 2015. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [34] N. P. Bitter and J. E. Shepherd. Detonation and transition to detonation in partially water-filled pipes. In *Proceedings of ASME 2012 Pressure Vessels and Piping Division, HP-2 Conference ASME/PVP, July 15-19, 2012, Toronto, Ontario, Canada*, 2012. PVP2012-78539.
- [35] N. P. Bitter and J. E. Shepherd. Detonation and transition to detonation in partially water-filled pipes. *Journal of Pressure Vessel Technology*, 135(3):031203, 2013. Preprint, see journal for final version. <http://dx.doi.org/10.1115/1.4023429>.
- [36] N. P. Bitter and J. E. Shepherd. Dynamic buckling of submerged tubes due to impulsive external pressure. In *Proceedings of 2013 SEM Annual Conference and Exposition on Experimental and Applied Mechanics, June 3-5, 2013, Lombard, IL*, 2013.
- [37] N. P. Bitter and J. E. Shepherd. On the adequacy of shell models for predicting stresses and strains in thick-wall tubes subjected to detonation loading. In *Proceedings of ASME 2013 Pressure Vessels and Piping Division, Conference ASME/PVP, July 14-18, 2013, Paris, France*, 2013. PVP2013-97148.
- [38] N. P. Bitter and J. E. Shepherd. A simple model for axial loading in a cylindrical pipe with internal shock loading. *Journal of Applied Mechanics*, 81(3):034505, 2013. Preprint, see journal for final version. <http://dx.doi.org/10.1115/1.4023429>.

- [39] N. P. Bitter and J. E. Shepherd. Transient growth in hypervelocity boundary layers. 7th AIAA Theoretical Fluid Mechanics Conference, Atlanta, GA, 16-20 June 2014. AIAA-2014-2497. Preprint, see final version at <http://dx.doi.org/10.2514/6.2014-2497>, 2014.
- [40] N. P. Bitter and J. E. Shepherd. Stability of highly-cooled hypervelocity boundary layers. *Journal of Fluid Mechanics*, 778:586–620, 2015. Available at <http://dx.doi.org/10.1017/jfm.2015.358>.
- [41] N. P. Bitter and J.E. Shepherd. Detonation and DDT in partially water-filled pipes. Technical Report FM2012.001, Graduate Aeronautical Laboratories, California Institute of Technology, May 2012.
- [42] N. P. Bitter and J.E. Shepherd. Dynamic buckling and fluid-structure interaction of submerged tubular structures. In A. Shukla, Y. D. S. Rajapakse, and M. E. Hynes, editors, *Blast Mitigation: Experimental and Numerical Studies*, pages 189–227. Springer, 2014. (Preprint, see book (ISBN 978-1-4614-7266-7) for final version. http://dx.doi.org/10.1007/978-1-4614-7267-4_7).
- [43] N. P. Bitter and J.E. Shepherd. On the adequacy of shell models for predicting stresses and strains in thick-wall tubes subjected to detonation loading. Technical Report FM2015.001, Graduate Aeronautical Laboratories, California Institute of Technology, December 2015.
- [44] L. Boeck, M. Meijers, A. Kink, R. Mével, and J. E. Shepherd. Ignition of fuel-air mixtures from a hot circular cylinder. *Combustion and Flame*, 185:265–277, 2017. Available at <https://doi.org/10.1016/j.combustflame.2017.07.007>.
- [45] Lorenz Boeck, Josue Melguizo-Gavilanes, and Joseph E. Shepherd. Hot surface ignition dynamics in hydrogen-air mixtures near the flammability limits. Paper No. 1100, 26th International Colloquium on the Dynamics of Explosions and Reactive Systems, Boston, MA, 30 July 4 August 2017, 2017.
- [46] P. A. Boettcher, R. Mével, V. Thomas, and J. E. Shepherd. The effect of heating rates on low temperature hexane air combustion. *Fuel*, 96:392–403, 2012. Preprint, see journal for final version: <http://dx.doi.org/10.1016/j.fuel.2011.12.044> Supplemental material: Note on refitting thermodynamic data; Cantera format thermodynamic data.
- [47] P.A. Boettcher, S. K. Menon, B.L. Ventura, G. Blanquart, and J. E. Shepherd. Cyclic flame propagation in premixed combustion. *Journal of Fluid Mechanics*, 735:176–202, 2013. Preprint, see journal for final version. <http://dx.doi.org/10.1017/jfm.2013.495>.
- [48] Philipp A. Boettcher. *Thermal Ignition*. PhD thesis, California Institute of Technology, Pasadena, California, May 2012. Electronic version available at Caltech Electronic Thesis Distribution (ETD).

- [49] W. Breitung, C. Chan, S. Dorofeev, A. Eder, B. Gelfand, M. Heitsch, R. Klein, A. Malliakos, J. E. Shepherd, E. Studer, and P. Thibault. Flame acceleration and deflagration to detonation transition in nuclear safety. state-of-the-art report by a group of experts. Technical Report NEA/CSNI/R(2000)7, OECD Nuclear Energy Agency, August 2000. See my SOAR website for individual chapters. Available from the OECD as a single pdf file.
- [50] S. Browne, Z. Liang, and J. E. Shepherd. Detailed and simplified chemical reaction mechanisms for detonation simulation. Paper 05F-21 - Fall 2005 Western States Section of the Combustion Institute, Stanford University, Oct. 17-18, 2005, 2005.
- [51] S. Browne, J. Zeigler, and J.E. Shepherd. Numerical solution methods for shock and detonation jump conditions. Technical Report FM2006-006, Graduate Aeronautical Laboratories, California Institute of Technology, February 2008. Download the most recent version from the Shock and Detonation Toolbox Website.
- [52] S. T. Browne and J.E. Shepherd. Linear stability of detonations with reversible chemical reactions. 2007 Fall Meeting of the Western States Section of the Combustion Institute, Livermore, CA October 16-17, Paper 07F-70, 2007.
- [53] P. M. Buraczewski and J. E. Shepherd. Initiation of detonation by shock focusing. Technical Report FM2004.004, Graduate Aeronautical Laboratories, California Institute of Technology, October 2004.
- [54] A. M. Capece, J. E. Polk, and J. E. Shepherd. Decoupling the thermal and plasma effects on the operation of a xenon hollow cathode. *IEEE Transactions on Plasma Science*, 43(9):3249–3255, 2015. Available at <http://dx.doi.org/10.1109/TPS.2015.2465845>.
- [55] Angela M. Capece. *Plasma-Surface Interactions in Hollow Cathode Discharges for Electric Propulsion*. PhD thesis, California Institute of Technology, Pasadena, California, May 2012.
- [56] T. Chao and J.E. Shepherd. Detonation loading of tubes in the modified shear wave regime. In Z. Jiang, editor, *Proceedings of the 24th International Symposium on Shock Waves*, volume 2, pages 865–870. Springer, 2005.
- [57] T. Chao, E. Wintenberger, and J. E. Shepherd. On the Design of Pulse Detonation Engines. Technical Report FM00-7, California Institute of Technology, January 2001.
- [58] T.-W. Chao and J. E. Shepherd. Comparison of fracture response of pre-flawed tubes under internal static and detonation loading. In W. Cheng

- and S. Itoh, editors, *2003 ASME Pressure Vessels and Piping Conference, Emerging Technologies in Fluids, Structures, and Fluid-Structure Interactions*, PVP Vol. 460, pages 129–144. ASME, 2003.
- [59] T.-W. Chao and J. E. Shepherd. Comparison of fracture response of preflawed tubes under internal static and detonation loading. *Journal of Pressure Vessel Technology*, 126(3):345–353, August 2004. (Preprint - see journal for final version <http://dx.doi.org/10.1115/1.1767861>).
- [60] T.-W. Chao and J. E. Shepherd. Fracture response of externally flawed aluminum cylindrical shells under internal gaseous detonation loading. *International Journal of Fracture*, 134(1):59–90, July 2005. Preprint, see journal for final version <http://dx.doi.org/10.1007/s10704-005-5462-x>.
- [61] T.-W. Chao and JE Shepherd. Fracture response of externally-flawed cylindrical shells to internal gaseous detonation loading. In M. Fisher and A. Holdo, editors, *ASME Pressure Vessels and Piping Conference. Emerging technologies in Fluids, Structures, and Fluid-Structure Interactions*, PVP Vol. 462-2, pages 85–98. ASME, 2002. PVP2002-1491.
- [62] Tong Wa Chao. *Gaseous Detonation-Driven Fracture of Tubes*. PhD thesis, California Institute of Technology, Pasadena, California, March 2004. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [63] K. Chatelain, R. Mével, S. Menon, G. Blanquart, and J. E. Shepherd. Ignition and chemical kinetics of acrolein-oxygen mixtures behind reflected shock waves. *Fuel*, 135:498–508, 2014. Preprint, see journal for final version. <http://dx.doi.org/10.1016/j.fuel.2014.07.004>.
- [64] M. Cooper, S. Jackson, and J. E. Shepherd. Effect of deflagration-to-detonation transition on pulse detonation engine impulse. Technical Report FM00-3, Graduate Aeronautical Laboratories, California Institute of Technology, July 2000.
- [65] M. Cooper, S. I. Jackson, J. M. Austin, E. Wintenberger, and J. E. Shepherd. Direct experimental impulse measurements for detonations and deflagrations. *Journal of Propulsion and Power*, 18(5):1033–1041, 2002. (Preprint - see journal for final version <http://dx.doi.org/10.2514/2.6052>).
- [66] M Cooper, SI Jackson, JM Austin, E Wintenberger, and JE Shepherd. Direct experimental impulse measurements for detonations and deflagrations. 37th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 8-11, 2001, Salt Lake City Utah, AIAA 2001-3812.
- [67] M. Cooper, J. Jewell, and J. E. Shepherd. The effect of a porous thrust surface on detonation tube impulse. 39th AIAA/ASME/SAE/ASEE Joint

- Propulsion Conference and Exhibit, July 20-23, 2003, Huntsville, Al, AIAA 2003-4822, 2003.
- [68] M. Cooper and J. E. Shepherd. The effect of nozzles and extensions on detonation tube performance. 38th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 7-10, 2002, Indianapolis IN, AIAA 2002-2628, 2002.
- [69] M. Cooper and J. E. Shepherd. Experiments studying thermal cracking, catalytic cracking, and pre-mixed partial oxidation of JP-10. 39th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 20-23, 2003, Huntsville, Al, AIAA 2003-4867, 2003.
- [70] M. Cooper and J. E. Shepherd. Effect of porous thrust surfaces on detonation transition and detonation tube impulse. *Journal of Propulsion and Power*, 20(5):811–819, 2004. (Preprint - see journal for final version <http://dx.doi.org/10.2514/1.4999>).
- [71] M. Cooper and J. E. Shepherd. Effect of transient nozzle flow on detonation tube impulse. 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 11-14, 2004, Ft. Lauderdale, FL, AIAA 2004-3914, 2004.
- [72] M. Cooper and J. E. Shepherd. Detonation tube impulse in sub-atmospheric environments. *Journal of Propulsion and Power*, 22(4):845–851, 2006. (Preprint - see journal for final version <http://dx.doi.org/10.2514/1.16979>).
- [73] M. Cooper and J. E. Shepherd. Single-cycle impulse from detonation tubes with nozzles. *Journal of Propulsion and Power*, 24(1):81–87, 2008. (Preprint - see journal for final version <http://dx.doi.org/10.2514/1.30192>).
- [74] M. Cooper, J. E. Shepherd, and F. Schauer. Impulse correlation for partially-filled tubes. *Journal of Propulsion and Power*, 20(5):947–950, 2004. (Preprint - see journal for final version <http://dx.doi.org/10.2514/1.4997>).
- [75] M Cooper and JE Shepherd. Thermal and catalytic cracking of JP-10 for pulse detonation engine applications. Technical Report FM2002.002, Graduate Aeronautical Laboratories, California Institute of Technology, December 2002.
- [76] Marcia Cooper. *Impulse Generation by Detonation Tubes*. PhD thesis, California Institute of Technology, Pasadena, California, June 2004. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [77] S. Coronel, N. Bitter, V. Thomas, R. Mével, and J. E. Shepherd. Non-linear extrapolation of laminar flame properties from spherically expanding flames. Western States Section of the Combustion Institute. California Institute of Technology, March 23-25 2014. Paper # 087LF-0020, 2014.

- [78] S. Coronel, J. Melguizo-Gavilanes, D. Davidenko, R. Mével, and J. E. Shepherd. Reduction methodology for detailed kinetic mechanisms: Application to n-hexane-air hot surface ignition. 11th Asia-Pacific Conference on Combustion, The University of Sydney, NSW Australia, 10-14 December 2017., 2017.
- [79] S. Coronel, J. Melguizo-Gavilanes, R. Mével, and J. E. Shepherd. Experimental and numerical study on moving hot particle ignition. *Combustion and Flame*, 192:495–506, 2018. Published version available at <https://doi.org/10.1016/j.combustflame.2018.02.027>.
- [80] S. Coronel, J. Melguizo-Gavilanes, and J. E. Shepherd. Temperature field measurements of thermal boundary layer and wake of moving hot spheres using interferometry. *Experimental Fluid and Thermal Science*, 90:76–83, 2018. Published version available at <http://dx.doi.org/10.1016/j.expthermflusci.2017.08.031>. Supplemental Material.
- [81] S. Coronel, S. Menon, R. Mével, G. Blanquart, and J. E. Shepherd. Ignition of n-hexane-air mixtures by moving hot spheres. 24th International Colloquium on the Dynamics of Explosions and Reactive Systems. Taipei, Taiwan July 28-August 2, 2013. Paper 239, 2013.
- [82] S. Coronel, R. Mevel, S.P.M. Bane, and J.E. Shepherd. Experimental study of minimum ignition energy of lean H₂-N₂O mixtures. In *Proceedings of the Combustion Institute*, volume 34, pages 895–902, 2012. Preprint, see journal for final version.
- [83] S. Coronel, R. Mével, P. Verish, P. A. Boettcher, V. Thomas, N. Chaumeix, N. Darabiha, and J. E. Shepherd. Laminar burning speed of n-hexane-air mixtures. 8th US National Combustion Meeting, University of Utah, May 19-22, 2013. Paper 070LT-0383, 2013.
- [84] S. A. Coronel. *Thermal Ignition Using Moving Hot Particles*. PhD thesis, California Institute of Technology, Pasadena, California, May 2016. See Caltech Electronic Thesis Distribution (ETD) for availability.
- [85] J. Damazo, K. Chow-Yee, J. Karnesky, and J. E. Shepherd. Mitigation effects of poymer coating on deformation from non-ideal explosions. In *Proceedings of IMPLAST 2010, SEM Fall COnference, University of Rhode Island. Oct. 14-20*, 2010.
- [86] J. Damazo, J. Odell, and J. E. Shepherd. Boundary layer profile behind gaseous detonation as it affects reflected shock wave bifurcation. 42nd AIAA Fluid Dynamics Conference and Exhibit, June 25-28, 2012 New Orleans, Louisiana AIAA 2012-2975, 2012.
- [87] J. Damazo and J. E. Shepherd. Reflected detonation waves: Comparing theory to measured reflected shock speed. In *Proceedings of the 29th Symposium on Shock Waves, July 14-19, 2013, Madison, WI*, 2013.

- [88] J. Damazo and J.E. Shepherd. Observations on the normal reflection of gaseous detonations. *Shock Waves*, 27:795–810, 2017. Available at <http://dx.doi.org/10.1007/s00193-017-0736-6>.
- [89] J. Damazo, J. Ziegler, J. Karnesky, and J. E. Shepherd. Shock wave-boundary layer interaction from reflecting detonations. In *Proceedings of the 28th International Symposium on Shock Waves, University of Manchester, July 17-22, 2011.*, 2011. In publication.
- [90] Jason S. Damazo. *Planar Reflection of Gaseous Detonation*. PhD thesis, California Institute of Technology, Pasadena, California, May 2013. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [91] C. Eckett, J.J. Quirk, and J.E. Shepherd. An analytical model for direct initiation of gaseous detonations. In A.F.P. Houwing, R.R. Boyce, P.M. Danehy, M. Hannemann, J.J. Kurtz, T.J. McIntyre, S.J. McMahon, D.J. Mee, A. Paull, R.J. Sandeman, and H. Tanno, editors, *Proceedings of the 21st International Symposium on Shock Waves*, volume 1, pages 383–388, 1998. This short article was preliminary and contains some inaccuracies. Please use Eckett, Quirk, and Shepherd JFM article as the primary reference.
- [92] C.A. Eckett, J.J. Quirk, and J.E. Shepherd. The role of unsteadiness in direct initiation of gaseous detonation. *Journal of Fluid Mechanics*, 421:147–183, 2000. (Preprint - see journal for final version <http://dx.doi.org/10.1017/S0022112000001555>).
- [93] Christopher A. Eckett. *Numerical and Analytical Studies of the Dynamics of Gaseous Detonations*. PhD thesis, California Institute of Technology, Pasadena, California, September 2000.
- [94] F. Pintgen and J. E. Shepherd. Detonation diffraction in regular and irregular mixtures. Extended abstract for 20th International Colloquium on the Dynamics of Explosions and Reactive Systems, Montreal, Canada, 31 July - August 5 2005.
- [95] S. Gallier, R. Mével, D. Davidenko, F. Pintgen, and J. E. Shepherd. Numerical study of detonation wave diffraction in hydrogen-based mixtures. 24th International Colloquium on the Dynamics of Explosions and Reactive Systems. Taipei, Taiwan July 28-August 2, 2013. Paper 233, 2013.
- [96] S. Gallier, F. Le Palud, F. Pintgen, R. Mével, and J.E. Shepherd. Detonation wave diffraction in h₂-o₂-ar mixtures. *Proceedings of the Combustion Institute*, 36(2):2781–2789, 2017. Preprint, published version available at <http://dx.doi.org/10.1016/j.proci.2016.06.090>.
- [97] M. Grunthaner, S.I. Jackson, and J. E. Shepherd. Design and Construction of an Annular Detonation Initiator. Technical Report FM01-5, Graduate Aeronautical Laboratories, California Institute of Technology, September 2001.

- [98] M. P. Grunthaler and J. M. Austin. Design considerations and structural analysis of the narrow channel facility. Technical Report FM2003-003, Graduate Aeronautical Laboratories, California Institute of Technology, October 2003.
- [99] Jeffrey Hanna. *Solid-oxide fuel cell electrode microstructures : making sense of the internal framework affecting gas transport*. PhD thesis, California Institute of Technology, Pasadena, California, May 2010. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [100] J.-P. Hébral and J. E. Shepherd. User guide for detonation cell size measurement using photoshop and matlab. Technical Report FM00-6, Graduate Aeronautical Laboratories, California Institute of Technology, December 2000.
- [101] P. Hung and J.E. Shepherd. Initiation of a stabilized detonation by a projectile. In Z. Jiang, editor, *Proceedings of the 24th International Symposium on Shock Waves*, volume 2, pages 769–774. Springer, 2005.
- [102] Patrick Hung. *Algorithms for Reaction Mechanism Reduction and Numerical Simulation of Detonations Initiated by Projectiles*. PhD thesis, California Institute of Technology, Pasadena, California, June 2003. For a version formatted for printing, see this one-sided version.
- [103] Patrick Hung and Joseph E. Shepherd. Reduction of detailed chemical reaction networks for detonation simulations. 12th International Detonation Symposium, August 11-16, San Diego CA 2002, 2002.
- [104] K. Inaba, A. Matsuo, and J. E. Shepherd. Soot track formation by shock waves and detonations. Extended abstract for 20th International Colloquium on the Dynamics of Explosions and Reactive Systems, Montreal, Canada, 31 July - August 5 2005.
- [105] K. Inaba, A. Matsuo, K. Tanaka, A. K. W. Lam, F. Pintgen, E. Wintenberger, J. Austin, and J. E. Shepherd. On the mechanism of soot track formation: Numerical study. Extended abstract for 19th International Colloquium on the Dynamics of Explosions and Reactive Systems, Hakone, Japan, 27 July - August 1 2003.
- [106] K. Inaba and J. E. Shepherd. Flexural waves in fluid-filled tubes subject to axial impact. In *Proceedings of the ASME Pressure Vessels and Piping Conference. July 27-31, Chicago, IL USA*, 2008. PVP2008-61672.
- [107] K. Inaba and J. E. Shepherd. Impact generated stress waves and coupled fluid-structure responses. In *Proceedings of the SEM XI International Congress & Exposition on Experimental and Applied Mechanics. June 2-5, Orlando, FL USA*, 2008. Paper 136.

- [108] K. Inaba and J. E. Shepherd. Failure of liquid-filled filament-wound composite tubes subjected to axial impact. In *Proceedings of the 17th International Conference on Composite Materials, July 27-31, Edinburgh, UK, 2009*.
- [109] K. Inaba and J. E. Shepherd. Fluid-structure interaction in liquid-filled composite tubes under impulsive loading. In *Proceedings of the SEM International Congress & Exposition on Experimental and Applied Mechanics, June 1-4, Albuquerque, NM, USA, 2009*. Paper 413.
- [110] K. Inaba and J. E. Shepherd. Plastic deformation and vibration in a fluid-filled tube subject to axial impact. In *Proceedings of the ASME Pressure Vessels and Piping Conference, July 26-30, Prague, Czech Republic, 2009*. PVP2009-77821.
- [111] K. Inaba and J. E. Shepherd. Dynamics of cavitating flow and flexural waves in fluid-filled tubes subject to structural impact. In *Proceedings of the ASME Pressure Vessels and Piping Conference, July 18-22, Bellevue, WA, 2010*. PVP2010-25989.
- [112] K. Inaba and J. E. Shepherd. Flexural waves in fluid-filled tubes subject to axial impact. *Journal of Pressure Vessel Technology*, 132(2):021302, April 2010. Preprint, see journal for final version. <http://dx.doi.org/10.1115/1.4000510>.
- [113] S. I. Jackson, J. M. Austin, and J. E. Shepherd. Planar detonation initiation in large-aspect-ratio channels. *AIAA Journal*, 44(10):2422-2425, 2006. Preprint, see journal for final version <http://dx.doi.org/10.2514/1.21581>.
- [114] S. I. Jackson, M. Grunthaner, and J. E. Shepherd. Wave implosion as an initiation mechanism for pulse detonation engines. 39th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 20-23, 2003, Huntsville, Al, AIAA 2003-4820, 2003.
- [115] S. I. Jackson, B. J. Lee, and J. E. Shepherd. Detonation mode and frequency analysis under high loss conditions for stoichiometric propane-oxygen. *Combustion and Flame*, 167:24-38, 2016. Preprint, published version available at <https://doi.org/10.1016/j.combustflame.2016.02.030>.
- [116] S. I. Jackson and J. E. Shepherd. Initiation systems for pulse detonation engines. 38th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 7-10, 2002, Indianapolis IN, AIAA 2002-2627, 2002.
- [117] S. I. Jackson and J. E. Shepherd. Detonation initiation via imploding shock waves. 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 11-14, 2004, Ft. Lauderdale, FL, AIAA 2004-3919, 2004.

- [118] S. I. Jackson and J. E. Shepherd. A toroidal imploding detonation wave initiator for pulse detonation engines. *AIAA Journal*, 45(1):257–270, 2007. Preprint, see journal for final version <http://dx.doi.org/10.2514/1.24662>.
- [119] S. I. Jackson and J. E. Shepherd. Detonation initiation in a tube via imploding toroidal shock waves. *AIAA Journal*, 46(9):2357–2367, 2008. Preprint, see journal for final version <http://dx.doi.org/10.2514/1.35569>.
- [120] Scott Jackson. *Detonation initiation via wave implosion*. PhD thesis, California Institute of Technology, Pasadena, California, May 2005. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [121] S.I. Jackson, P.M. Buraczewski, and J. E. Shepherd. Initiation of detonations and deflagrations by shock reflection and focusing. Extended abstract for 20th International Colloquium on the Dynamics of Explosions and Reactive Systems, Montreal, Canada, 31 July - August 5 2005.
- [122] SI Jackson and JE Shepherd. The development of a pulse detonation engine simulator facility. Technical Report FM2002.006, Graduate Aeronautical Laboratories, California Institute of Technology, December 2002.
- [123] J. S. Jewell. *Boundary-Layer Transition on a Slender Cone in Hypervelocity Flow with Real Gas Effects*. PhD thesis, California Institute of Technology, Pasadena, California, May 2014. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [124] J. S. Jewell, I. A. Leyva, and J.E. Shepherd. Turbulent spots in hypervelocity flow. *Experiments in Fluids*, 58, 2017. Available at <http://dx.doi.org/10.1007/s00348-017-2317-y>.
- [125] J. S. Jewell, N. J. Parziale, I. A. Leyva, and J. E. Shepherd. Turbulent spot observations with a hypervelocity boundary layer on a 5-deg half-angle cone. 42nd AIAA Fluid Dynamics Conference and Exhibit, June 25-28, 2012 New Orleans, Louisiana AIAA 2012-3062, 2012.
- [126] J. S. Jewell, J. E. Shepherd, and I. A. Leyva. Shock tunnel operation and correlation of boundary layer transition on a cone in hypervelocity flow. In *Proceedings of the 29th Symposium on Shock Waves, July 14-19, 2013, Madison, WI. Paper No. 300*, 2013. Supplemental Material.
- [127] J. S. Jewell, R. M. Wagnild, I. A. Leyva, G. V. Candler, and J. E. Shepherd. Transition within a hypervelocity boundary layer on a 5-degree half-angle cone in air/CO₂ mixtures. 51st AIAA Aerospace Sciences Meeting, 7-10 January 2013, Dallas, Texas. AIAA 2013-523, 2013.
- [128] J.S. Jewell, I.A. Leyva, N.J. Parziale, and J.E. Shepherd. Effect of gas injection on transition in hypervelocity boundary layers. In *Proceedings of*

- the 28th International Symposium on ShockWaves, University of Manchester, July 17-22, 2011.*, 2011. In publication.
- [129] J.S. Jewell, N.J. Parziale, I.A. Leyva, and J.E. Shepherd. Effects of shock-tube cleanliness on hypersonic boundary layer transition at high enthalpy. *AIAA Journal*, 55(1):332–338, January 2017. Preprint, published version available at <http://dx.doi.org/10.2514/1.J054897>.
- [130] M. Kaneshige. Detonation spectroscopy: Results, problems, and directions. Unpublished notes on spectroscopic measurements at Caltech in 1997., Fall 1997.
- [131] M. Kaneshige and J.E. Shepherd. Detonation database. Technical Report FM97-8, Graduate Aeronautical Laboratories, California Institute of Technology, July 1997. See also the electronic hypertext version at http://shepherd.caltech.edu/detn_db/html/.
- [132] M. Kaneshige and J.E. Shepherd. Hydrocarbon - air - nitrous oxide detonations. Western States Section / The Combustion Institute, Spring Meeting, Sandia National Laboratories, Livermore, CA, April 14 and 15 1997.
- [133] Michael J. Kaneshige. *Gaseous Detonation Initiation and Stabilization by Hypervelocity Projectiles*. PhD thesis, California Institute of Technology, Pasadena, California, January 1999.
- [134] M.J. Kaneshige, E. Schultz, U.J. Pfahl, J.E. Shepherd, and R. Akbar. Detonations in mixtures containing nitrous oxide. In G. Ball, R. Hillier, and G. Roberts, editors, *Proceedings of the 22nd International Symposium on Shock Waves*, volume 1, pages 251–256, 2000.
- [135] M.J. Kaneshige and J.E. Shepherd. Oblique detonation stabilized on a hypervelocity projectile. In *26th Symposium (International) on Combustion*, pages 3015–3022, Naples, 1996.
- [136] Shannon Kao. *Detonation Stability with Reversible Kinetics*. PhD thesis, California Institute of Technology, Pasadena, California, June 2008. Electronic version available to internal users at Caltech Electronic Thesis Distribution (ETD).
- [137] J. Karnesky, J. Damazo, J. E. Shepherd, and A. Rusinek. Plastic response of thin-wall tubes to detonation. In *Proceedings of the ASME Pressure Vessels and Piping Conference. July 18-22, Bellevue, WA, 2010*. PVP2010-25749.
- [138] J. Karnesky, J. S. Damazo, K. Chow-Yee, A. Rusinek, and J. E. Shepherd. Plastic deformation due to reflected detonation. *International Journal of Solids and Structures*, 50(1):97–110, 2013. Preprint, see journal for final version. <http://dx.doi.org/10.1016/j.ijsolstr.2012.09.003>.

- [139] J. Karnesky, W. J. Pitz, and J.E. Shepherd. Detonation in gaseous isopropyl nitrate mixtures. 2007 Fall Meeting of the Western States Section of the Combustion Institute, Livermore, CA October 16-17, Paper 07F-40, 2007.
- [140] James Karnesky. *Detonation Induced Strain in Tubes*. PhD thesis, California Institute of Technology, Pasadena, California, May 2010. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [141] J. Kasahara, Z. Liang, S.T. Browne, and J. E. Shepherd. Impulse generation by an open shock tube. *AIAA Journal*, 46(7):1593–1603, 2008. Preprint, see journal for final version <http://dx.doi.org/10.2514/1.27467>.
- [142] A. M. Khokhlov, J. M. Austin, F. Pintgen, and J. E. Shepherd. Numerical study of the detonation wave structure in ethylene-oxygen mixtures. 42nd AIAA Aerospace Sciences Meeting and Exhibit, January 5-8, 2004, Reno, NV, AIAA 2004-0792, 2004.
- [143] Rupert Klein, J. Chris Krok, and JE Shepherd. Curved quasi-steady detonations. asymptotic analysis and detailed chemical kinetics. Technical Report FM95-04, Graduate Aeronautical Laboratories, California Institute of Technology, May 1995.
- [144] R. Knystautas, J.H.S. Lee, J. E. Shepherd, and A. Teodorczyk. Flame acceleration and transition to detonation in benzene-air mixtures. *Combustion and Flame*, 115:424–436, 1998. (Preprint - see journal for final version [http://dx.doi.org/10.1016/S0010-2180\(98\)00014-5](http://dx.doi.org/10.1016/S0010-2180(98)00014-5)).
- [145] J. Chris Krok. One-dimensional flame propagation mechanisms. Unpublished notes on the solution of ideal steady high-speed flames. RPI, Troy, NY., July 1991.
- [146] J. Christopher Krok. *Jet Initiation of Deflagration and Detonation*. PhD thesis, California Institute of Technology, Pasadena, California, May 1997. Appendices.
- [147] Oliver Kunz. Combustion characteristics of hydrogen- and hydrocarbon-air mixtures in closed vessels. Technical Report FM98-4, GALCIT, March 1998.
- [148] Eddie Kwon, Sally P. Moffett, Joseph E. Shepherd, and Arthur C. Day. Combustion characteristics of hydrogen as used in a flammable test mixture. In *Proceedings of the International Conference on Lightning and Static Electricity 2007*, 2007. Paper PPR-48.
- [149] A. K. W. Lam, J. Austin, F. Pintgen, E. Wintenberger, J. Austin, J. E. Shepherd, K. Inaba, and A. Matsuo. On the mechanism of soot track

- formation: Experimental study. Extended abstract for 19th International Colloquium on the Dynamics of Explosions and Reactive Systems, Hakone, Japan, 27 July - August 1 2003.
- [150] J. J. Lee and J. E. Shepherd. Spark Ignition Measurements in Jet A: part II. Technical Report FM99-7, Graduate Aeronautical Laboratories, California Institute of Technology, December 1999.
- [151] Z. Liang, S. Browne, R. Deiterding, and J. E. Shepherd. Detonation front structure and the competition for radicals. In *Proceedings of the 31st Combustion Institute*, volume 31, pages 2445–2453, 2007. Preprint, see journal for final version.
- [152] Z. Liang, T. Curran, and J. E. Shepherd. Structural response to detonation loading in a 90-degree bend. Extended abstract for 26th International Symposium on Shock Waves, Göttingen, Germany, 15–20 July 2007.
- [153] Z. Liang, T. Curran, and J. E. Shepherd. Structural response of piping components to detonation loading. Technical Report FM2006-008, Graduate Aeronautical Laboratories, California Institute of Technology, October 2008. Draft version of Oct 2008.
- [154] Z. Liang, J. Karnesky, and J. E. Shepherd. Detonations in $C_2H_4-O_2$. Experimental measurements and validation of numerical simulation for incident and reflected waves. Technical Report FM2006-009, Graduate Aeronautical Laboratories, California Institute of Technology, June 2008.
- [155] Z. Liang, J. Karnesky, and J.E. Shepherd. Deflagration-to-detonation transition tests in $H_2-O_2-N_2-He$ mixtures. Technical Report FM2006-004, Graduate Aeronautical Laboratories, California Institute of Technology, August 2006.
- [156] Z. Liang, J. Karnesky, and J.E. Shepherd. Structural response to reflected detonations and deflagration-to-detonation transition in H_2-N_2O mixtures. Technical Report FM2006-003, Graduate Aeronautical Laboratories, California Institute of Technology, August 2006.
- [157] Z. Liang and J.E. Shepherd. Explosion testing of the nested can containment system. Part I: Planar gap. Part II. thick-walled tube. Part III. 3013 outer can. Technical Report FM2007-001, Graduate Aeronautical Laboratories, California Institute of Technology, May 2007.
- [158] D. Lieberman and J. E. Shepherd. Shock wave induced mixing and reaction. Extended abstract for 20th International Colloquium on the Dynamics of Explosions and Reactive Systems, Montreal, Canada, 31 July - August 5 2005.
- [159] D. Lieberman and J. E. Shepherd. Detonation interaction with a diffuse interface and subsequent chemical reaction. *Shock Waves*, 16(6):421–430, 2007. Preprint, see journal for final version <http://dx.doi.org/10.1007/s00193-007-0080-3>.

- [160] D. Lieberman and J. E. Shepherd. Detonation interaction with an interface. *Physics of Fluids*, 19:096101, 2007. Preprint, see journal for final version <http://dx.doi.org/10.1063/1.2768903>.
- [161] D. H. Lieberman and J. E. Shepherd. Detonation initiation by hot turbulent jet for use in pulse detonation engines. 38th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 7-10, 2002, Indianapolis IN, AIAA 2002-3909, 2002.
- [162] D. L. Lieberman, J. E. Shepherd, F. Wang, J. Liu, and M. A. Gundersen. Characterization of a corona discharge initiator using detonation tube impulse measurements. 43rd AIAA Aerospace Sciences Meeting and Exhibit, January 10-13, 2005, Reno, NV, AIAA 2005-1344, 2005.
- [163] Daniel H. Lieberman. *Detonation Refraction at Sharp and Diffuse interfaces*. PhD thesis, California Institute of Technology, Pasadena, California, November 2005. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [164] T. C. Ligon, D. J. Gross, and J. E. Shepherd. Forces on piping bends due to propagating detonations. In *Proceedings of ASME 2011 Pressure Vessels and Piping Division, Conference ASME/PVP, July 17-21, 2011, Baltimore, MD, USA*, 2011. PVP2011-57278.
- [165] T. C. Ligon, D. J. Gross, and J. E. Shepherd. Response of piping tees to propagating detonations. In *Proceedings of ASME 2013 Pressure Vessels and Piping Division, Conference ASME/PVP, July 14-18, 2013, Paris, France*, 2013. PVP2013-97115.
- [166] C. Marrese-Reading, J. St. Vaughn, J. Corliss, S. Gayle, P. Zell, K. Hamm, R. Pain, D. Rooney, A. Ramos, D. Lewis, J. E. Shepherd, and K. Inaba. Retro rocket plume actuated heat shield exhaust ports. Paper 1488. Presented at the 2009 IEEE Aerospace Conference, Big Sky, Montana., March 7-14 2009.
- [167] J. Melguizo-Gavilanes, L. Boeck, R. Mével, and J. E. Shepherd. Hot surface ignition of stoichiometric hydrogen-air mixtures. *International Journal of Hydrogen Energy*, 42(11):7393–7403, 2017. Preprint, published version available at <http://dx.doi.org/10.1016/j.ijhydene.2016.05.095>.
- [168] J. Melguizo-Gavilanes, S. Coronel, R. Mével, and J. E. Shepherd. Dynamics of ignition of stoichiometric hydrogen-air mixtures by moving heated particles. *International Journal of Hydrogen Energy*, 42(11):7380–7392, 2017. Preprint, published version available at <http://dx.doi.org/10.1016/j.ijhydene.2016.05.206>.
- [169] J. Melguizo-Gavilanes, R. Mével, S. Coronel, and J. E. Shepherd. Effects of differential diffusion on hot surface ignition of stoichiometric

- hydrogen-air. *Proceedings of the Combustion Institute*, 36(1):1155–1163, 2017. Preprint, published version available at <http://dx.doi.org/10.1016/j.proci.2016.06.120>.
- [170] J. Melguizo-Gavilanes, A. Nové-Josserand, S. Coronel, R. Mével, and J. E. Shepherd. Hot surface ignition of *n*-hexane mixtures using simplified kinetics. *Combustion Science and Technology*, 188(11-12):2060–2076, 2016. Preprint, published version available at <http://dx.doi.org/10.1080/00102202.2016.1212577>.
- [171] J. Melguizo-Gavilanes and J.E. Shepherd. Effect of rotation on ignition thresholds of stoichiometric hydrogen-air mixtures. 7th International Conference on Hydrogen Safety, Hamburg, Germany, September 11-13, 2017, 2017.
- [172] Josue Melguizo-Gavilanes and Joseph E.Shepherd. Effect of orientation on the ignition of stoichiometric ethylene mixtures by stationary hot surfaces. Paper No. 981, 26th International Colloquium on the Dynamics of Explosions and Reactive Systems, Boston, MA, 30 July 4 August 2017, 2017.
- [173] J. Meltzer, J. E. Shepherd, E. Akbar, and A. Sabet. Mach reflection of detonation waves. In *Progress in Astronautics and Aeronautics*, volume 153, pages 78–94. AIAA, 1993. From ICDERS meeting in Nagoya in 1991.
- [174] R. Mével, P. A. Boettcher, and J. E. Shepherd. Absorption cross section at 3.39 μm of alkanes, aromatics and substituted hydrocarbons. *Chemical Physics Letters*, 531:22–27, 2012. Preprint, see journal for final version. <http://dx.doi.org/10.1016/j.cplett.2012.01.069>.
- [175] R. Mével, K. Chatelain, G. Blanquart, and J. E Shepherd. An updated reaction model for the high-temperature pyrolysis and oxidation of acetaldehyde. *Fuel*, 217:226–229, 2018. Published version available at <https://doi.org/10.1016/j.fuel.2017.12.060>. Supplemental Material.
- [176] R. Mével, K. Chatelain, P.A. Boettcher, G. Dayma, and J. E. Shepherd. Low temperature oxidation of *n*-hexane in a flow reactor. *Fuel*, 126:282–293, 2014. Preprint, see journal for final version. <http://dx.doi.org/10.1016/j.fuel.2014.02.072>.
- [177] R. Mével, K. Chatelain, P.A. Boettcher, and J.E. Shepherd. Low temperature oxidation of *n*-hexane in a flow reactor. 8th US National Combustion Meeting. University of Utah, May 19-22, 2013. Paper 070RK-0399, 2013.
- [178] R. Mével, D. Davidenko, J. M. Austin, F. Pintgen, and J. E. Shepherd. Application of a laser induced fluorescence model to the numerical simulation of detonation waves in hydrogenoxygendiluent mixture. *International J of Hydrogen Energy*, 30:6044–6060, 2014. Preprint, see jour-

- nal for final version. <http://dx.doi.org/10.1016/j.ijhydene.2014.01.182> Supplemental Material.
- [179] R. Mével, D. Davidenko, F. Lafosse, N. Chaumiex, G. Dupré, C.-E. Paillard, and J.E. Shepherd. Detonation in hydrogen-nitrous oxide-diluent mixtures: An experimental and numerical study. *Combust. Flame*, 162:1638–1649, 2015. Preprint, see journal for final version. <http://dx.doi.org/10.1016/j.combustflame.2014.11.026>.
- [180] R. Mével, J. Melguizo-Gavilanes, L.R. Boeck, and J.E. Shepherd. Hot surface ignition of ethylene-air mixtures. selection of reaction models for CFD simulations. Paper # 2RK-0098. 10th US National Combustion Meeting, Organized by the Eastern States Section of the Combustion Institute, April 23-26, 2017, College Park, Maryland, 2017.
- [181] R. Mével, U. Niedzielska, J. Melguizo-Gavilanes, S. Coronel, and J. E. Shepherd. Chemical kinetics of n-hexane-air atmospheres in the boundary layer of a moving hot sphere. *Combustion Science and Technology*, 188(11-12):2267–2283, 2016. Preprint, published version available at <http://dx.doi.org/10.1080/00102202.2016.1211886>.
- [182] R. Mével, S. Pichon, L. Catoire, N. Chaumeix, C.-E. Paillard, and J.E. Shepherd. Dynamics of excited hydroxyl radicals in hydrogen-based mixtures behind reflected shock waves. In *Proceedings of the Combustion Institute*, volume 34, pages 677–684, 2012. Preprint, see journal for final version. Supplemental Material.
- [183] R. Mével and J. E. Shepherd. Ignition delay time of small hydrocarbon-nitrous oxide(-oxygen) mixtures. 24th International Colloquium on the Dynamics of Explosions and Reactive Systems. Taipei, Taiwan July 28-August 2, 2013. Paper 215, 2013.
- [184] Robert Carlos Moeller. *Charge Transport and onset-related phenomena in an MPD thruster modified by applied magnetic fields*. PhD thesis, California Institute of Technology, Pasadena, California, February 2013. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [185] S. P. Moffett, S.G. Bhandari, J.E. Shepherd, and E. Kwon. Investigation of statistical nature of spark ignition. 2007 Fall Meeting of the Western States Section of the Combustion Institute, Livermore, CA October 16-17, Paper 07F-42, 2007.
- [186] EO Morano and JE Shepherd. Effect of reaction rate periodicity on detonation propagation. In M. D. Furnish, Y. Horie, and N. N. Thadhani, editors, *Shock Compression of Condensed Matter – 2001: 12th APS Topical Conference*, pages 446–449. AIP, 2002. AIP Conference Proceedings 620.

- [187] José Roberto Simões Moreira. *Adiabatic Evaporation Waves*. PhD thesis, Rensselaer Polytechnic Institute, Troy, New York, October 1994.
- [188] J.R. Simões Moreira and J.E. Shepherd. Evaporation waves in superheated dodecane. *J. Fluid Mech.*, pages 63–86, 1998. (Preprint - see journal for final version <http://dx.doi.org/10.1017/S0022112098003796>).
- [189] Bradford Morris. *Charge-exchange collision dynamics and ion engine grid geometry optimization*. PhD thesis, California Institute of Technology, Pasadena, California, February 2007. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [190] A. Nové-Josserand, Y. Kishita, J. Melguizo-Gavilanes, S. Coronel, L. Boeck, R. Mével, and J. E. Shepherd. Ignition of hydrogen-air mixtures by a concentrated stationary hot surface. International Symposium on Hazards, Prevention, and Mitigation of Industrial Explosion (ISHP-MIE), July 24-29 2016, Dalian, China, 2016.
- [191] N Parziale, J. E. Shepherd, and H. G. Hornung. Observations of hypervelocity boundary layer instability. *Journal of Fluid Mechanics*, 781:87–112, 2015. Available at <http://dx.doi.org/10.1017/jfm.2015.489>.
- [192] N. J. Parziale. *Slender-Body Hypervelocity Boundary Layer Instability*. PhD thesis, California Institute of Technology, Pasadena, California, May 2013. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [193] N. J. Parziale, H. G. Hornung, and J. E. Shepherd. Reflected shock tunnel noise measurement by focused differential interferometry. 42nd AIAA Fluid Dynamics Conference and Exhibit, June 25-28, 2012 New Orleans, Louisiana AIAA 2012-3261, 2012.
- [194] N. J. Parziale, H. G. Hornung, and J. E. Shepherd. Differential interferometric measurement of instability at two points in a hypervelocity boundary layer. 51st AIAA Aerospace Sciences Meeting, 7-10 January 2013, Dallas, Texas. AIAA 2013-521, 2013.
- [195] N. J. Parziale, J. S. Jewell, J. E. Shepherd, and H. G. Hornung. Shock tunnel noise measurement with resonantly enhanced focused schlieren deflectometry. In *Proceedings of the 28th International Symposium on Shock Waves, University of Manchester, July 17-22, 2011.*, 2011. In publication.
- [196] N. J. Parziale, J.S. Jewell, I.A. Leyva, and J. E. Shepherd. Effects of shock-tube cleanliness on slender-body hypersonic instability and transition studies at high enthalpy. 53st AIAA Aerospace Sciences Meeting, 4-9 January 2015, Kissimmee, Florida. AIAA 2015-0530, 2015.
- [197] N. J. Parziale, J. Rabinovich, G. Blanquart, H. G. Hornung, and J. E. Shepherd. A proposed vertical expansion tunnel. 42nd AIAA Fluid Dynamics Conference and Exhibit, June 25-28, 2012 New Orleans, Louisiana AIAA 2012-3263, 2012.

- [198] N. J. Parziale, J. Rabinowitz, G. Blanquart, H. G. Hornung, and J. E. Shepherd. A proposed vertical expansion tunnel. *AIAA J.*, 51(12):2792–2799, 2013. preprint, accepted for publication, *AIAA J.*, June 16, 2013. <http://dx.doi.org/10.2514/1.J052389>.
- [199] N. J. Parziale, B.E. Schmidt, J.S. Damazo, P.S. Wang, H.G. Hornung, and J. E. Shepherd. Pulsed laser diode for use as a light source for short-exposure, high-frame-rate flow visualization. 53st AIAA Aerospace Sciences Meeting, 4-9 January 2015, Kissimmee, Florida. AIAA 2015-0530, 2015.
- [200] N. J. Parziale, J. E. Shepherd, and H. G. Hornung. Differential interferometric measurement of instability in a hypervelocity boundary layer. *AIAA J.*, 51(3):750–754, 2013. Preprint, see journal for final version. <http://dx.doi.org/10.2514/1.J052013>.
- [201] N. J. Parziale, J. E. Shepherd, and H. G. Hornung. Geometric acoustics in high speed boundary layers. In *Proceedings of the 29th Symposium on Shock Waves, July 14-19, 2013, Madison, WI*, 2013.
- [202] N. J. Parziale, J. E. Shepherd, and H. G. Hornung. Free-stream density perturbations in a reflected-shock tunnel. *Exp Fluids*, 55(2):1665, 2014. <http://dx.doi.org/10.1007/s00348-014-1665-0>.
- [203] L.E. Perotti, R. Deiterding, K. Inaba, J.E. Shepherd, and M. Ortiz. Elastic response of water-filled fiber composite tubes under shock wave loading. *International Journal of Solids and Structures*, 50(34):473–486, 2013. Preprint, see journal for final version. <http://dx.doi.org/10.1016/j.ijsoistr.2012.10.015>.
- [204] U. Pfahl, E. Schultz, and J.E. Shepherd. Detonation cell width measurements for $\text{H}_2\text{-N}_2\text{O-O}_2\text{-CH}_4\text{-NH}_3$ mixtures. Technical Report FM98-5, Graduate Aeronautical Laboratories, California Institute of Technology, April 1998.
- [205] U. Pfahl and J.E. Shepherd. Flammability, ignition energy and flame speeds in $\text{NH}_3\text{-H}_2\text{-CH}_4\text{-N}_2\text{O-O}_2\text{-N}_2$ mixtures. Technical Report FM97-4R1, Graduate Aeronautical Laboratories, California Institute of Technology, July 1997.
- [206] U. Pfahl and J.E. Shepherd. Nitrous oxide consumption and flammability limits of $\text{H}_2\text{-N}_2\text{O-Air}$ and $\text{CH}_4\text{-N}_2\text{O-O}_2\text{-N}_2$ mixtures. Western States Section / The Combustion Institute, Fall Meeting, Also GALCIT Report FM97-16, October 1997.
- [207] U. Pfahl and J.E. Shepherd. Jet initiation of deflagration and detonation in stoichiometric $\text{H}_2\text{-O}_2\text{-N}_2$ mixtures. Technical Report FM99-1, Graduate Aeronautical Laboratories, California Institute of Technology, November 1999.

- [208] U. Pfahl, J.E. Shepherd, and C. Unal. Combustion within porous waste. Technical Report FM97-18, Graduate Aeronautical Laboratories, California Institute of Technology, February 1998. Explosion Dynamics Laboratory Report to Los Alamos National Laboratory.
- [209] U.J. Pfahl, M.C. Ross, J.E. Shepherd, K.O. Pasamehmetoglu, and C. Ural. Flammability limits, ignition energy, and flame speeds in H_2 - N_2O - CH_4 - NH_3 - O_2 - N_2 mixtures. *Combustion and Flame*, 123:440, 2000. (Preprint - see journal for final version [http://dx.doi.org/10.1016/S0010-2180\(00\)00152-8](http://dx.doi.org/10.1016/S0010-2180(00)00152-8)).
- [210] F. Pintgen, J. M. Austin, and J. E. Shepherd. Detonation front structure: Variety and characterization. In G.D. Roy, S.M. Frolov, R.J. Santoro, and S.A. Tsyganov, editors, *Confined Detonations and Pulse Detonation Engines*, pages 105–116. Torus Press, Moscow, 2003.
- [211] F. Pintgen, CA Eckett, JM Austin, and JE Shepherd. Direct observations of reaction zone structure in propagating detonations. *Combustion and Flame*, 133(3):211–229, 2003. (Preprint - see journal for final version [http://dx.doi.org/10.1016/S0010-2180\(02\)00458-3](http://dx.doi.org/10.1016/S0010-2180(02)00458-3)).
- [212] F. Pintgen, Z. Liang, and J. E. Shepherd. Structural response of tubes to deflagration-to-detonation transition. Extended abstract for 21st International Colloquium on the Dynamics of Explosions and Reactive Systems, Poitiers, France, 23-27 July 2007.
- [213] F. Pintgen and J. E. Shepherd. Quantitative analysis of reaction front geometry in detonation. In G.D. Roy, A.A. Berlin, S.M. Frolov, J.E. Shepherd, and S.A. Tsyganov, editors, *International colloquium on application of detonation for propulsion*, pages 23–28. Torus Press, Moscow, 2004. Full paper (to appear in proceedings).
- [214] F. Pintgen and J. E. Shepherd. Pulse detonation engine impulse and detonation sensitivity analysis for partially oxidized jet fuel. 17th International Symposium on Airbreathing Engines, Munich, 4-9 September 2005. ISABE-2005-1304, 2005.
- [215] F. Pintgen and J. E. Shepherd. Secondary pressure waves from rich fireballs. Extended abstract for 20th International Colloquium on the Dynamics of Explosions and Reactive Systems, Montreal, Canada, 31 July - August 5 2005.
- [216] F. Pintgen and J. E. Shepherd. Stereoscopic imaging of transverse detonations in diffraction. 5th Pacific Symposium on Flow Visualisation and Image Processing 27-29th September, 2005, Australia (paper PSFVIP-5-250), 2005.
- [217] F. Pintgen and J. E. Shepherd. Stereoscopic imaging of transverse detonations in diffraction. *Journal of Flow Visualization and Imaging*

- Processing*, 14(1):121–142, 2007. Preprint, see journal for final version <http://dx.doi.org/10.1615/JFlowVisImageProc.v14.i1.80>.
- [218] F Pintgen and J E Shepherd. Detonation diffraction in gases. *Combustion and Flame*, 156(3):665–677, 2009. (Preprint, see journal for final version. Online version at <http://dx.doi.org/10.1016/j.combustflame.2008.09.008>).
- [219] F. Pintgen and J.E. Shepherd. Mixing and combustion in rich fireballs. Technical Report FM2003-004, Graduate Aeronautical Laboratories, California Institute of Technology, October 2003.
- [220] F. Pintgen and J.E. Shepherd. Simultaneous soot foil and plif imaging of propagating detonations. Extended abstract for 19th International Colloquium on the Dynamics of Explosions and Reactive Systems, Hakone, Japan, 27 July - August 1 2003.
- [221] Florian Pintgen. *Laser-Optical Visualization of Detonation Structures*. Diplomarbeit, Lehrstuhl für Thermodynamik: Technische Universität München / Graduate Aeronautical Laboratories: California Institute of Technology, Munich, Germany, December 2000.
- [222] Florian Pintgen. *Detonation diffraction in mixtures with various degrees of instability*. PhD thesis, California Institute of Technology, Pasadena, California, December 2004. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [223] Kumar S. Raman. Laminar burning velocities of lean hydrogen-air mixtures. Technical Report FM97-15, GALCIT, January 1998.
- [224] A. C. Ratzel and J. E. Shepherd. Heat transfer resulting from premixed combustion. In C.K. Law, Y. Jaluria, W. W. Yuen, and K. Miyasaka, editors, *Heat Transfer in Fire and Combustion Systems HTD-45*, pages 191–201. ASME, 1985. ASME Conference Proceedings.
- [225] George B. Rawls, Jr., F. Coyne Prenger, J. E. Shepherd, and Zhe Liang. Pressure integrity of 3013 container under postulated accident conditions. *Journal of Nuclear Materials Management*, XXXVIII(3):43–53, 2010. Preprint, also available as SRNL-STI-2010-00053.
- [226] M.C. Ross and J.E. Shepherd. Lean combustion characteristics of hydrogen-nitrous oxide-ammonia mixtures in air. Technical Report FM96-4, Graduate Aeronautical Laboratories, California Institute of Technology, July 1996. Graduate Aeronautical Laboratories Report to Los Alamos National Laboratory, Part I. For part II, see the PDF.
- [227] S. Sanderson, J. Austin, Z. Liang, F. Pintgen, J. E. Shepherd, and H. Hornung. Reactant jetting in unstable detonation. 39th AIAA Fluid Mechanics Conference, San Antonio, Texas, 22-25 June 2009, AIAA-2009-4325, see PAS article for final version., 2009.

- [228] S. Sanderson, J. Austin, Z. Liang, F. Pintgen, J. E. Shepherd, and H. Hornung. Reactant jetting in unstable detonation. *Progress in Aerospace Sciences*, 46(2-3):116–131, 2010. Preprint, see journal for final version. <http://dx.doi.org/10.1016/j.paerosci.2009.11.002>.
- [229] B. E. Schmidt. *On the Stability of Supersonic Boundary Layers with Injection*. PhD thesis, California Institute of Technology, Pasadena, California, May 2016. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [230] B. E. Schmidt, N.P. Bitter, H.G. Hornung, and J. E. Shepherd. Injection into supersonic boundary layers. *AIAA J*, 54(1):161–173, 2016. Preprint, for published version see <http://dx.doi.org/10.2514/1.J054123>.
- [231] B. E. Schmidt, B. Bobbitt, N. J. Parziale, and J. E. Shepherd. Experiments in a combustion-driven shock tube with an area change. In *Proceedings of the 29th Symposium on Shock Waves, July 14-19, 2013, Madison, WI*, 2013.
- [232] B. E. Schmidt and J. E. Shepherd. Analysis of focused laser differential interferometry. *Applied Optics*, 54(28):8459–8472, 2015. Preprint, published version available at <http://dx.doi.org/10.1364/AO.54.008459>.
- [233] B. E. Schmidt and J. E. Shepherd. Oscillations in cylinder wakes at mach 4. *Journal of Fluid Mechanics*, 785:R3, December 2015. Rapid communication, available at <http://dx.doi.org/10.1017/jfm.2015.668>.
- [234] B.E. Schmidt, H.G. Hornung, N. P. Bitter, and J. E. Shepherd. Experimental investigation of gas injection into the boundary layer of a slender body in a supersonic flow. 7th AIAA Theoretical Fluid Mechanics Conference, Atlanta, GA, 16-20 June 2014. AIAA-2014-2496. Preprint, see final version at <http://dx.doi.org/10.2514/6.2014-2496>, 2014.
- [235] B.E. Schmidt and J. E. Shepherd. Measurements of instability in supersonic flow with injection by time-resolved flow visualization. 54th AIAA Aerospace Sciences Meeting, 4-7 January 2016, San Diego, CA. AIAA 2016-0599, 2016.
- [236] E. Schultz and J.E. Shepherd. Detonation analysis using detailed reaction mechanisms. In G. Ball, R. Hillier, and G. Roberts, editors, *Proceedings of the 22nd International Symposium on Shock Waves*, volume 1, pages 273–278, 2000.
- [237] E. Schultz and J.E. Shepherd. Detonation diffraction through a mixture gradient. Technical Report FM00-1, Graduate Aeronautical Laboratories, California Institute of Technology, February 2000.
- [238] E. Schultz and J.E. Shepherd. Validation of detailed reaction mechanisms for detonation simulation. Technical Report FM99-5, Graduate Aeronautical Laboratories, California Institute of Technology, February 2000.

- [239] E. Schultz, E. Wintenberger, and J.E. Shepherd. Investigation of deflagration to detonation transition for application to pulse detonation engine ignition systems. In *Proceedings of the 16th JANNAF Propulsion Symposium*, page ? Chemical Propulsion Information Agency, 1999.
- [240] Eric Schultz. *Detonation Diffraction Through an Abrupt Area Expansion*. PhD thesis, California Institute of Technology, Pasadena, California, April 2000.
- [241] J. Shepherd. Chemical kinetics of hydrogen-air-diluent detonations. volume 106 of *Progress in Astronautics and Aeronautics*, pages 263–293. AIAA, 1986.
- [242] J. E. Shepherd. Interface effects in underwater explosions. In *Conventional Weapons Underwater Explosions*, pages 43–83. Office of Naval Research, Dec 1988. Workshop Report ONR Contract No. N00014-88-J-1150.
- [243] J. E. Shepherd. Pressure loads and structural response of the BNL high-temperature detonation tube. Technical Report A-3991, Brookhaven National Laboratory, January 1992. Revised September 24, 1992. 25 Mb (scanned in).
- [244] J. E. Shepherd. Pulse detonation engines: Multidisciplinary, multiuniversity research. Technical report, Graduate Aeronautical Laboratories, California Institute of Technology, August 2002. Final Report for First 3 years of ONR MURI project 1999-2002, Grant 00014-99-1-0744, Subcontract 1686-ONR-0744.
- [245] J. E. Shepherd. Detonation: A look behind the front. Extended abstract for 19th International Colloquium on the Dynamics of Explosions and Reactive Systems, Hakone, Japan, 27 July - August 1 2003.
- [246] J. E. Shepherd. Initiation of detonation by annular jets and shock waves. Technical Report FM2005.001, Graduate Aeronautical Laboratories, California Institute of Technology, May 2005. Final Report for Award ONR N00014-02-1-0589.
- [247] J. E. Shepherd. Pulse detonation engines: Initiation, propagation, and performance. Technical Report FM2005.002, Graduate Aeronautical Laboratories, California Institute of Technology, May 2005. Final Report for Award ONR N00014-02-1-0589.
- [248] J. E. Shepherd. Structural response of piping to internal gas detonation. In *ASME Pressure Vessels and Piping Conference*. ASME, 2006. PVP2006-ICPVT11-93670, July 23-27 2006 Vancouver BC Canada.
- [249] J. E. Shepherd. Detonation in gases. In *Proceedings of the Combustion Institute*, volume 32, pages 83–98, 2009. Preprint, see journal for final version. Online version at <http://dx.doi.org/10.1016/j.proci.2008.08.006>.

- [250] J. E. Shepherd. Structural response of piping to internal gas detonation. *Journal of Pressure Vessel Technology*, 131(3):031204, 2009. Preprint, see journal for final version <http://dx.doi.org/10.1115/1.3089497>.
- [251] J. E. Shepherd and R. Akbar. Piping system response to detonations. Results of ES1, TS1 and SS1 testing. Technical Report FM2009-001, Graduate Aeronautical Laboratories, California Institute of Technology, August 2010.
- [252] J. E. Shepherd, R. Akbar, and E. A. Rodriguez. Gaseous detonation in piping systems partially filled with liquid. In *Proceedings of the ASME Pressure Vessels and Piping Conference. July 26-30, Prague, Czech Republic*, 2009. PVP2009-77734.
- [253] J. E. Shepherd, J. M. Austin, T. Chao, F. Pintgen, E. Wintenberger, S. Jackson, and M. Cooper. Detonation initiation, propagation, and structural response. 14th ONR Propulsion Conference, Chicago IL, August 2001.
- [254] J. E. Shepherd, J. M. Austin, T. Chao, F. Pintgen, E. Wintenberger, S. Jackson, and M. Cooper. Detonation initiation and propagation. 15th ONR Propulsion Conference, Washington DC, August 2002.
- [255] J. E. Shepherd, J. M. Austin, F. Pintgen, E. Wintenberger, S. Jackson, and M. Cooper. Detonation structure, initiation, and engine component performance. 16th ONR Propulsion Conference, Los Angeles CA, June 2003.
- [256] J. E. Shepherd, J. Karnesky, F. Pintgen, and J.C. Krok. Experimental measurements of strains and blast waves resulting from detonations in tubes. Technical Report FM2006-010, Graduate Aeronautical Laboratories, California Institute of Technology, June 2008.
- [257] J. E. Shepherd, J. C. Krok, J. J. Lee, L. L. Brown, R. T. Lynch, T. M. Samaras, and M. M. Birky. Results of 1/4-scale experiments, vapor simulant and liquid Jet A tests. Technical Report FM98-6, Graduate Aeronautical Laboratories, California Institute of Technology, July 1998.
- [258] J. E. Shepherd, J. J. Lee, and J. C. Krok. Spark ignition measurements in Jet A. Technical Report FM97-9, Graduate Aeronautical Laboratories, California Institute of Technology, June 1998.
- [259] J. E. Shepherd, I. O. Moen, S. B. Murray, and P. A. Thibault. Analyses of the cellular structure of detonations. In *Proceedings of the Combustion Institute*, volume 21, pages 1649–1658, 1986.
- [260] J. E. Shepherd, C. D. Nuyt, and J. J. Lee. Flash Point and Chemical Composition of Aviation Kerosene (Jet A). Technical Report FM99-4, California Institute of Technology, December 1999.

- [261] J. E. Shepherd and F. Perez. Kerosene lamps and cook stoves: the hazards of gasoline contamination. *Fire Safety Journal*, 43(3):171–179, 2008. Preprint, see journal for final version <http://dx.doi.org/10.1016/j.firesaf.2007.08.001>.
- [262] J. E. Shepherd and F. Pintgen. Elastic and plastic structural response of tubes to deflagration-to-detonation transition. Technical Report FM2006-005, Graduate Aeronautical Laboratories, California Institute of Technology, January 2007.
- [263] J. E. Shepherd, E. Schultz, J. M. Austin, M. Cooper, S. Jackson, E. Wintemberger, and T. Chao. Detonation initiation, diffraction, and impulse. 13th ONR Propulsion Conference, Minneapolis MN, August 2000.
- [264] J. E. Shepherd, A. Teodorczyk, R. Kynstautas, and J.H.S. Lee. Shock waves produced by reflected detonations. In *Progress in Astronautics and Aeronautics*, volume 134, pages 244–264. AIAA, 1991. From ICDERS meeting at Ann Arbor in 1989.
- [265] J.E. Shepherd. Hydrogen-steam jet-flame facility and experiments. Technical Report SAND84-0060 R3 NUREG/CR-3638, Sandia National Laboratories, 1984.
- [266] J.E. Shepherd. Analysis of diffusion flame tests. Technical Report SAND86-0419 R3 NUREG/CR-4534, Sandia National Laboratories, 1987.
- [267] J.E. Shepherd. Detonation waves and propulsion. In J. Buckmaster, T.L. Jackson, and A. Kumar, editors, *Combustion in High-Speed Flows*, pages 373–420. Kluwer, 1994.
- [268] J.E. Shepherd and R. Akbar. Forces due to detonation propagation in a bend. Technical Report FM2008-002, Graduate Aeronautical Laboratories, California Institute of Technology, February 2009.
- [269] J.E. Shepherd and D. R. Begeal. Transient compressible flow in porous materials. Technical Report SAND83-1788, Sandia National Laboratories, 1988.
- [270] J.E. Shepherd and H. Hornung. Sound generation by explosive decompression of an airplane. In Z. Jiang, editor, *Proceedings of the 24th International Symposium on Shock Waves*, volume 2, pages 973–978. Springer, 2005.
- [271] J.E. Shepherd and K. Inaba. Shock loading and failure of fluid-filled tubular structures. In A. Shukla, G. Ravichandran, and Y. Rajapakse, editors, *Dynamic Failure of Materials and Structures*, pages 153–190. Springer, 2010. preprint - corrected March 2010.

- [272] J.E. Shepherd and J. Kasahara. Analytical models for the thrust of a rotating detonation engine. Technical Report FM2017.001, Graduate Aeronautical Laboratories, California Institute of Technology, September 2017. Submitted for publication to the Journal of Propulsion and Power.
- [273] J.E. Shepherd, J.C. Krok, and J.J. Lee. Jet a explosions - field test plan 1/4-scale experiments. Technical Report FM97-17, Graduate Aeronautical Laboratories, California Institute of Technology, June 1997. Revised December 1997.
- [274] J.E. Shepherd, J.C. Krok, and J.J. Lee. Jet a explosions experiments: Laboratory testing. Technical Report FM97-5, Graduate Aeronautical Laboratories, California Institute of Technology, June 1997. Revised November 1997.
- [275] J.E. Shepherd and J. H. S. Lee. On the transition from deflagration to detonation. In M. Y. Hussaini, A. Kumar, and R. G. Voigt, editors, *Major Research Topics in Combustion*, ICASE/NASA LaRC Series, pages 439–487. Springer, 1992.
- [276] JE Shepherd, F Pintgen, JM Austin, and CA Eckett. The structure of the detonation front in gases. 30th AIAA Aerospace Sciences Meeting and Exhibit, January 14-17, 2002, Reno NV, AIAA 2002-0773.
- [277] J.E. Shepherd, E. Schultz, and R. Akbar. Detonation diffraction. In G. Ball, R. Hillier, and G. Roberts, editors, *Proceedings of the 22nd International Symposium on Shock Waves*, volume 1, pages 41–48, 2000.
- [278] Joseph E Shepherd. *Dynamics of Vapor Explosions: Rapid Evaporation and Instability of Butane Droplets Exploding at the Superheat Limit*. PhD thesis, California Institute of Technology, Pasadena, California, Sept 1980. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [279] S. Singh, D. Lieberman, and J. E. Shepherd. Combustion behind shock waves. Paper 03F-29 Western States Section/Combustion Institute, October 2003.
- [280] Regina M. Sullivan. *The physics of high-velocity ions in the Hall thruster near-field*. PhD thesis, California Institute of Technology, Pasadena, California, March 2010. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [281] Yasuhiro Takashima, Jiro Kasahara, Joseph E. Shepherd, and Ikko Funaki. Impulse generated by a shock tube in a vacuum. 46nd AIAA Aerospace Sciences Meeting and Exhibit, January 7-10, 2008, Reno, NV, AIAA 2008-987, 2008.

- [282] A. Teodorczyk and J.E. Shepherd. Interaction of a shock wave with a water layer. Technical Report FM2012.002, Graduate Aeronautical Laboratories, California Institute of Technology, May 2012.
- [283] P. Thibault, J. D. Penrose, J. E. Shepherd, W. B. Benedick, and D.V. Ritzel. Blast waves generated by planar detonations. In *Shock Tubes and Waves, Proceedings of the 16th International Conference on Shock Tubes and Waves, Aachen, West Germany, July 26-31, 1987.*, pages 765–771, 1987.
- [284] Vaughan L. Thomas. *Particle-Based Modeling of Ni-YSZ Anodes*. PhD thesis, California Institute of Technology, Pasadena, California, May 2012. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [285] Jean-Christophe Veilleux and Joseph E. Shepherd. Impulsively-generated pressure transients and strains in a cylindrical fluid-filled tube terminated by a converging section. Paper # PVP2017-65471, Proceedings of the ASME 2017 Pressure Vessels and Piping Conference, PVP2017, July 16-20, 2017, Waikoloa, Hawaii, United States, 2017.
- [286] Brian Ventura. An experimental investigation of hot surface ignition of hydrogen and hydrocarbon mixtures in air. BS thesis, June 2011.
- [287] P. Verish-Kljakic, R. Mével, N. Chaumeix, G. Dupré, C.-E. Paillard, M. Allix, N. Darabiha, and J. E. Shepherd. Spherical expanding flame in silane-hydrogen-nitrous oxide mixtures. 24th International Colloquium on the Dynamics of Explosions and Reactive Systems. Taipei, Taiwan July 28-August 2, 2013. Paper 224, 2013.
- [288] E. Wintenberger, J. M. Austin, M. Cooper, S. Jackson, and J. E. Shepherd. An analytical model for the impulse of a single-cycle pulse detonation tube. *Journal of Propulsion and Power*, 19(1):22–38, 2003. (Preprint - see journal for final version <http://dx.doi.org/10.2514/2.6099>) See also the erratum (JPP 20(4) 765-767, 2004) and responses to comments by Heiser and Pratt (JPP 20(1) 189-191, 2004) and also Radulescu and Hanson (JPP 20(5), 957-959, 2004).
- [289] E. Wintenberger, J. M. Austin, M. Cooper, S. Jackson, and J. E. Shepherd. Erratum for 'analytical model for the impulse of single-cycle pulse detonation tube'. *Journal of Propulsion and Power*, 20(4):765–767, 2004. (preprint, see final version at <http://dx.doi.org/10.2514/1.9442>).
- [290] E. Wintenberger, J. M. Austin, M. Cooper, S. Jackson, and J. E. Shepherd. Reply to 'comment on analytical model for the impulse of single-cycle pulse detonation tube' by Heiser and Pratt. *Journal of Propulsion and Power*, 20(1):189–191, 2004. (Preprint, see final version at <http://dx.doi.org/10.2514/1.B4304R2>).

- [291] E Wintenberger, JM Austin, M Cooper, S Jackson, and JE Shepherd. Impulse of a single pulse detonation tube. Technical Report FM00-8, Graduate Aeronautical Laboratories, California Institute of Technology, August 2002.
- [292] E Wintenberger, JM Austin, M Cooper, SI Jackson, and JE Shepherd. An analytical model for the impulse of a single-cycle pulse detonation engine. 37th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 8-11, 2001, Salt Lake City Utah, AIAA 2001-3811, 2001.
- [293] E. Wintenberger, M. Cooper, F. Pintgen, and J. E. Shepherd. Reply to 'comment on analytical model for the impulse of single-cycle pulse detonation tube' by Radulescu and Hanson. *Journal of Propulsion and Power*, 20(5):957–959, 2004. (Preprint, see final version at <http://dx.doi.org/10.2514/1.9441>).
- [294] E. Wintenberger and J. E. Shepherd. A model for the performance of air-breathing pulse detonation engines. 39th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, July 20-23, 2003, Huntsville, Al, AIAA 2003-4511, 2003.
- [295] E. Wintenberger and J. E. Shepherd. The performance of steady detonation engines. AIAA 41th Aerospace Sciences Meeting, January 2003. AIAA-2003-0714., 2003.
- [296] E. Wintenberger and J. E. Shepherd. Thermodynamic analysis of combustion processes for propulsion. 42nd AIAA Aerospace Sciences Meeting and Exhibit, January 5-8, 2004, Reno, NV, AIAA 2004-1033, 2003.
- [297] E. Wintenberger and J. E. Shepherd. Introduction to "To the Question of Energy Use of Detonation Combustion" by Ya. B. Zel'dovich. *Journal of Propulsion and Power*, 22(3):586–587, 2006. (Translation of article originally published in Russian in Zhurnal Tekhnicheskoi Fiziki (Journal of Technical Physics) 10 (17), 1940 pp. 1453-1461. Preprint - see journal for final version <http://dx.doi.org/10.2514/1.B4997TC> and <http://dx.doi.org/10.2514/1.22705>).
- [298] E. Wintenberger and J. E. Shepherd. A model for the performance of air-breathing pulse detonation engines. *Journal of Propulsion and Power*, 22(3):593–603, 2006. (Preprint - see journal for final version <http://dx.doi.org/10.2514/1.5792>).
- [299] E. Wintenberger and J. E. Shepherd. The stagnation hugoniot analysis for steady combustion waves in propulsion systems. *Journal of Propulsion and Power*, 22(4):835–844, 2006. (Preprint - see journal for final version <http://dx.doi.org/10.2514/1.12779>).

- [300] E. Wintenberger and J. E. Shepherd. Thermodynamic cycle analysis of propagating detonations. *Journal of Propulsion and Power*, 22(3):694–698, 2006. (Preprint - see journal for final version <http://dx.doi.org/10.2514/1.12775>).
- [301] Eric Wintenberger. *Application of Steady and Unsteady Detonation Waves to Propulsion*. PhD thesis, California Institute of Technology, Pasadena, California, June 2004. Electronic version available at Caltech Electronic Thesis Distribution (ETD).
- [302] M.L. Wolf, D.H. Lieberman, and J.E. Shepherd. Characterization of gravity current formation for the use in detonation refraction experiments. Technical Report FM2005-006, Graduate Aeronautical Laboratories, California Institute of Technology, August 2005.
- [303] J. L. Ziegler, R. Deiterding, J. E. Shepherd, and D. I. Pullin. An adaptive high-order hybrid scheme for compressive, viscous flows with detailed chemistry. *Journal of Computational Physics*, 230:7598–7630, 2011. Preprint, see journal for final version. <http://dx.doi.org/10.1016/j.jcp.2011.06.016>.
- [304] J. L. Ziegler, R. Deiterding, J. E. Shepherd, and D. I. Pullin. An adaptive high-order hybrid scheme for compressive, viscous flows with detailed chemistry. Technical Report FM2011-001, Graduate Aeronautical Laboratories, California Institute of Technology, February 2011.
- [305] Jack L. Ziegler. *Simulations of Compressible, Diffusive, Reactive Flows with Detailed Chemistry Using a High-Order Hybrid WENO-CD Scheme*. PhD thesis, California Institute of Technology, Pasadena, California, December 2011. Electronic version available at Caltech Electronic Thesis Distribution (ETD).