ISSW35 - Program

08:20 - 09:00	Welcome Remarks, Welcome to	Country, Room: 49-200					
Mon 7 July 09:0	00 - 10:00						
09:00 - 10:00	Room: 49-200						
	Plenary 1: Em Prof Hans Ho	rnung, Recent developments in hi	gh-enthalpy ground testing				
Mon 7 July 10:0	00 - 11:00						
	Room: 50-N201	Room: 50-N202	Room: 50-T103	Room: 50-T105	Room: 50-S201	Room: 50-C207	Room: 49-313A
	Propulsion	Facilities and Instrumenta-	Shock Waves in Solids	Shock/Boundary Layer In-	Supersonic and Hypersonic	Chemically Reactive Flows	Shock-Vortex Interaction
	Chair: Jeong-Yeol Choi	Chair: Eric Petersen	Chair: Michael Liverts	Chair: Bavi Kumar Peetala	Chair: Dan Iara	Chair: Yoshitaka Sakamura	Chair: Biccardo Bonazza
10:00	Fluidic Thrust Vectoring of	Commissioning Experiments	Effect of shock wave on the	Effects of sweep angle on	Numerical Investigation of	Extension of a Chemical Re-	Influence of Aspect Ratios on
	Micro Nozzles in Space Appli- cation (326)	in the Oxford Cold Driven Expansion Tube CXT (52)	structural and optical prop- erties of MoS2 layered com-	hypersonic three-dimensional shock wave/turbulent bound-	Sonic Jet Injection in a Supersonic Crossflow with	action Model in the Fokker- Planck Framework and its Ap-	Expansion Wave Diffraction over Cavities (296)
	(S) Arnab Kumar Das, Tapan	(S) Omar Valeinis, Eric Won	Dr. Jayaram Vishakantaiah,	Xinliang Li, Ji Zhang	(S) Shailesh Kumar Singh, Arun	(67) Leo Basov, Georgii Oblapenko	Rajesh G, S Vishnu Prasad,
	Mankodi, Ujjwal K. Saha	Keun Chang, Tobias Hermann, Matthew Mcgilvray	Kavitha Jayaram, Nagaraj Mariyappa		Kumar Rajagopal, Srinivas M V V		Preetha Pushkarni P, Reia Ramkumar, Anbu Serene Raj C, Mano M, Vinoth P
10:20	Effect of Intake Shape on Su-	Heated Hydrogen Driver	Experimental and Numerical	Direct Numerical Simulation	On the extremely Fast Vibra-	Shock Processing of CdS	Experimental Study on a
	personic Pulsed Laser Propul- sion (324)	Upgrade for the HYPULSE Shock Tunnel Facility (265)	Study on the Effect of Inci- dent Shock Stress Waves on Crack Propagation in Blasting (195)	of a Boundary Layer Induced by a Hypersonic Fluid Flow over a Wall (11)	tional Energy Relaxation be- tween CO and H2O: An Ex- perimental Study (55)	nanostructure and Computer Simulation with Machine Learning (76)	Head-On Collision of Com- pressible Elliptical Vortex Rings. (387)
	(S) Taichi Kumazaki, Kohei Shi- mamura	Adrian Flores, Matthew Bush, Joseph Jewell	(S) Geunsoo Jeon	Amareshwara Sainadh Chamarthi, Josette Bellan	Dong He, Qizhen Hong, Renjie Li, Tielou Liu, Fei Li, Quanhua Sun, Ting Si, Xisheng Luo	Kavitha Jayaram, Jayaram V	(S) Rijin Rajan, Shakti Kumar, Pawan Kumar Karn, Kamal Pod- dar, Debopam Das
10:40	Exploring Three-dimensional	Measurement of Film Cooling	Electronic and Photolu-	An Investigation on the Ori-	Design and testing of a Flush	equilibrium-c: A Modern,	Effect of Shock Leakage on
	Compression Fields for the Design of Streamline-traced	Effectiveness in Shock Tunnel	minescence Spectra of	gin of Heat Streaks on a Swept Wedge-Cone Geometry in Hy-	Air Data Sensing System for Sounding Bockets (102)	Lightweight Equilibrium Chemistry Solver for Hyper-	Screech Mode Transition of Supersonic let Flows (87)
	Hypersonic Inlets (264)	Plate by Multi-Test Strategy (107)	Tube-Based Investigation (332)	personic Flow (286)	bounding notices (102)	sonic Flow Applications (299)	Supersonic set Flows (61)
	Rowan Gollan	Wei Zeng, Yizhi Fang, Haiteng Ma	Sivaprakash Paramasivam, S.A.	Jacob Vaughn, Ivett Leyva, Koen	(S) Sanjeev Adhikari, David	Nicholas Gibbons, Vincent Wheat-	(S) Jiacheng Liu, Shucheng Pan
			Martin Britto Dhas, Iknyun Kim	Groot, Bryan Morreale, Jacob Smotzer	Jahn, Ingo Jahn, Fabian Zander, Ingo	ley	
11:00 - 11:30	Coffee Break	·	·	· · · · · · · · · · · · · · · · · · ·		·	·
Mon 7 July 11:	30-12:50						
	Atmospheric Entry	Room: 50-N202 Diagnostics and Flow Visu-	Room: 50-T103 Multiphase Flows	Room: 50-T105 Shock/Boundary Laver In-	Room: 50-S201 Supersonic and Hypersonic	Room: 50-C207 Chemical Kinetics	Room: 49-313A Shock Wave Beflection, In-
	Atmospheric Entry	alization	multipliase riows	teraction	Flows	Chemical Rinerics	teraction, and Focussing
	Chair: Upendra Bhandarkar	Chair: Tamara Sopek	Chair: Josette Bellan	Chair: Arnab Roy	Chair: Ulrich Teubner	Chair: Justin Urso	Chair: Eran Arad
11:30	Flow visualization exper-	Improvement of Dye-	Numerical Simulation of the Aerobreakup of Two Droplet	The Effects of Mass Injec-	Study on the Ablation of	Contact-Surface Tailoring	Shock Wave Propagation
	membrane aeroshell using	Pressure-Sensitive Paint for	Positioned in Tandem under	upstream of a Crossing	Jet Environments via Flow-	Driver Mixtures in Diverging	Ducts (208)
	ISAS expansion tube (202)	Shock-Induced Unsteady Flow	High Speed Flow (65)	Shock/Boundary-layer Inter-	Material Response Coupled	Shock Tubes (37)	
	(S) Tomohito Morimoto, Jiro	(S) Yuma Kawamata, Takeru	(S) Yanming Li, Wangxia Wu,	(S) Anthony Finnerty, Matthew	(S) Seonghwan Kim, Kyu Hong	(S) Matthew Sandberg, Eric Pe-	(S) Naotaka Shigeta, Nao Kimura,
	Kasahara, Yasunori Nagata,	Kawashima, Kiharu Yoneyama,	Honghui Teng	Mcgilvray, David Mee, Raghul	Kim, Yosheph Yang, Hojun You,	tersen	Jun Hagiwara, Daniel Custodio,
	Kazuhiko Yamada	Daiju Numata		Ravichandran, Wesley Condren, Srinath Lakshman	Jaegang Kim		Takumi Asahi, Koki Ozawa, Yusuke Nakamura, Akihiro Sasoh.
							Gaku Fukushima
11:50	Preliminary analysis of radi-	CN Laser Absorption Mea-	Spread Rates of Bi-disperse	Wall Temperature Effect	Tagging Velocimetry in Hy-	NO Formation from Hydrogen	Investigation of flow control-
	speed Mars and Venus entry	tions in a Free-Piston Shock	Tarticle Curtains (458)	Boundary Layer Interaction	(200)	bustion in a Shock Tube us-	schemes for a V-shaped blunt
	(266)	Tube (436)		by Cryogenic Wall Cooling		ing Cavity Enhanced Absorp-	leading edge (6)
	Yu Liu, Alexis Lefevre, David	William Swain, Elijah Jans,	Kyle Daniel, Justin Wagner	(S) Yuma Miki, Leo Ando, Azumi	Ben Segall, Tim Keenoy, Nick	Ramees Rahman, Subith Vasu.	(S) Tao Zhang, Chongguang Shi,
	Gildfind, Kyle Damm, Chris James, Richard Morgan	Charley Downing, Kyle Lynch, Kyle Daniel, Justin Wagner		Miyazaki, Aoi Ban, Kiyoshi Kine- fuchi, Yasuhiro Egami	Parziale	Gregory Vogel	Chengxiang Zhu, Yancheng You
12:10	Convective Heat Transfer On	Drag Coefficient Measurement	Particle Separation Using Ex-	Effect of Freestream and	Subscale Suction Tests of	Molecular Level Understand-	Focusing of Shocks Generated
	Atmosphere At Varying En-	eration Rates (441)	pansion waves (157)	on SWBLI-Induced Unsteadi-	mann Intake for an Airbreath-	Chemistry in Hypersonic	Explosions of Different Ge-
	thalpies (315)	There is a start of the second start of the se	Martin Brouillatta Aurtis C. 1	ness in Mach 6 Flow (157)	ing Rocket (174)	Flows (293)	ometries (24)
	(S) Jithin Sreekumar, Honhar Gupta, Md Gulam Sarwar, Soumya	mauchi, Ren Sasaki, Mahiro Kudo,	Gaku Fukushima, David Char-	Joseph Jewell	тита мікі, тазики міуаzakı, Kiyoshi Kinefuchi, Yusuke Maru,	10m Schwartzentruber, Erik Tor- res	HernNdez Garcia, Michael Liverts
	Ranjan Nanda, Ashoke De, Mo- hammed Ibrahim Sugarno	Kiyonobu Ohtani	trand, Mohamed Eldakamawy		Hiroaki Kobayashi, Shinichiro Tokudome, Tetsuva Sato		
12:30	Measurement of Carbon	Shock Tube VUV Measure-	Experimental Investigation	Shock Reflections with Dy-	Hypersonic boundary-layer	Nonequilibrium chemistry	Thermochemical Non-
	Monoxide during TPS Abla-	Air Chemistry in Nitrogen	of Liquid Aluminum Droplet Breakup in a Shock Tube	namic Seperation Bubble (44)	transition control using	model validation in a high- enthalpy test facility (248)	Equilibrium Effects on Edney
	Tunnel using Tunable Diode	Oxygen-Argon Mixtures (256)	(254)		accustic inclasurface (00)	choncepy test facility (246)	in High-Enthalpy Hypersonic
	Laser Absorption Spec-						Flows (221)
	John Murray, Joshua Harais.	(S) Zev Granowitz, Devin Mer-	(S) Leopold Winter, Marcus	Jianhui Fan	(S) Yifeng Chen, Peixu Guo, Chi-	Tom Schwartzentruber, Erik Tor-	Anu Priya, Ravi Peetala
	Christopher Murzyn, William	rell, Jesse Streicher, Christopher	Giglmaier, Nikolaus A. Adams		hyung Wen	res, Anabel Del Val	
	Swain, Charley Downing, Kyle Lunch, Justin Wagner	Strand, Ronald Hanson					
12.50 - 13.50	Lunch	1	1	1		1	

Mon 7 July 13:	50 - 14:50						
13:50 - 14:50	Room: 49-200			-			
	Plenary 2: Assoc Prof Sally E Chair: Prof Akihiro Sasoh	Bane , Advancements in Active Con	ntrol of Shock Wave/Boundary La	yer Interaction			
14:50 - 15:20	Coffee Break						
Mon 7 July 15:	20-16:20	D KO NOOD			D 80 0004	D 80 0008	
	Room: 50-N201 Nozzle Flows and Super-	Room: 50-N202 Facilities and Instrumenta-	Room: 50-T103 Shock Wayes in Internal	Room: 50-T105 Shock/Boundary Layer In-	Room: 50-S201 Supersonic and Hypersonic	Room: 50-C207 Chemical Kinetics	Room: 49-313A Numerical Methods
	sonic Jets	tion	Flows	teraction	Flows		
15.20	Chair: Ben Guan	Chair: Sangdi Gu	Chair: Haiteng Ma	Chair: Guilai Han	Chair: Dale Pullin	Chair: Christopher Strand	Chair: Santanu Ghosh
13.20	Pulse, Highly Underexpanded	Large-diameter, Single-pulse	in internal flows (13)	lar crossflow model in conical	of shear layer stability for dif-	shock-induced dissociation of	Galerkin Method Based on In-
	Jet in the Endwall Region of a	Converging Shock Tube (89)		shock wave boundary layer in-	ferent boundary layer thick-	dust analogues - Buckminster-	terface Conservation for Com-
	Shock Tube (415)			teractions (323)	in a laminar supersonic flow	C24H12: Insights from real-	trary Grids (325)
					(339)	time optical emission diagnos-	
	(S) Tristan Crumley, Matthew Ab-	(S) Shijie Bai, Tianuou Wana.	Somnath Ghosh, Aaneev Bou	(S) Bikalpa Bomian Guruna, Sud-	(S) Mohammed Areeb Hussain.	tics. (42) Deepak Singh	Hong Luo, Gianni Absillis, Robert
	ulail, Eric Petersen	Xingyu Liang, Kun Wang		hir Laxman Gai , Krishna Talluru	Karthick Sk		Nourgaliev, Patrick Greene
15:40	Thrust Performance of ED	Near-Full-Scale CFD Simula-	Large Eddy Simulations of	Forced Axisymmetric Transi- tional SBLI at Mach 5 (440)	Experimental analysis of	State-to-State Chemical- Kinetic Database Construc-	Dynamic Load Balancing for Parallel Simulations of Un-
	Shock (284)	tion of HER-X Flowneid (343)	personic Co-flow Configura-	tional SBEI at Mach 5 (440)	using a ray-tracing technique	tion and Master Equation	steady Oblique Shock Wave
			tion (153)		for high-enthalpy conditions	Study for Hydrogen Chem-	Reflections Using Adaptive
	(S) Kyunghwan Han, Hyoung Jin	Takeharu Sakai, Hiroshi Kat-	Pavithirah Selvam, Balaji Himakar	Ashish Singh, James Threadgill,	(312) (S) James Wallington, Ram-	(S) Hyesu Jeong, Sung Min Jo,	Yoshitaka Sakamura, Hiroki Mori,
	Lee	surayama, Hideyuki Tanno	Apparascheruvu, Srisha Rao	Jesse Little	prakash Ananthapadmanaban,	Sung Min Jo	Katsuyuki Nakayama
					Anand Veeraragavan, David Mee		
16:00	Interaction of the Recircula-	Design and Performance Anal-	Unsteadiness mitigation in a	Interaction between cavity	Effects of calculated experi-	Stochastic Chemical-kinetics	Bound- and positivity-
	opment in Extremely Under-	sis of a Super/Hypersonic Shock Tunnel by Two-	deep sub-cavity (171)	and wake flows in the tran- sonic regime (250)	on double cone numerical pre-	Nodeling of High-temperature Nitrogen (94)	velocity-consistent HLL
	expanded Supersonic Imping-	Dimensional, Transient			dictions (28)	_ , ,	scheme for two-medium γ -
	ing Jet (240)	ics (108)					(124) based model of stiffened gas
	(S) Qingmo Xie, Huakun Huang,	(S) Siming Dai, Yizhi Fang, Hait-	(S) Cherishma Mallavarapu,	(S) Harshit Bansal, Pradeep	(S) Aaron Kennedy, Rowan Gol-	(S) Tae Woong Jeong, Sung Min	Wai Sun Don, Bao-Shan Wang,
	Peng Yu	eng Ma	Hideaki Ogawa, Karthick Sk	Moise, Karthick Sk, Sriram Ren- garajan, Sriram Rengarajan	lan, Matthew Mcgilvray	Jo, Sung Min Jo	Yuan-Yang Qiao, Chang-Ming Guo
16:20 - 17:20	Laboratory tours	1					
Tuesday 8 July							
08:30 - 08:40	Daily announcements, Room: 5	0-T203					
00.40 - 05.40	Planary 2, Prof Hidowski Tar	T 1 1 4 1 4 1 4 6					
	I fellary 5. From Hueyuki Tai.	ino, insights and Applications from	m nign-enthalpy Snock Tunnel Stu	ıdies			
Tue 8 July 09:4	Chair: Prof Joanna Austin	ino, insights and Applications from	m nign-entnaipy Snock Tunnel Stu	ıdies			
Tue 8 July 09:4	Chair: Prof Joanna Austin 0 - 11:00 Room: 50-N201	Room: 50-N202	Room: 50-T103	ndies	Room: 50-S201	Room: 50-C207	Room: 49-313A
Tue 8 July 09:4	Chair: Prof Joanna Austin 0 - 11:00 Room: 50-N201 Atmospheric Entry	Room: 50-N202 Diagnostics and Flow Visu-	Room: 50-T103 Shock Waves in Internal	Room: 50-T105 Shock/Boundary Layer In-	Room: 50-S201 Nozzle Flows and Super-	Room: 50-C207 Chemically Reactive Flows	Room: 49-313A Blast Waves
Tue 8 July 09:4	Chair: Savio Poovathingal	Room: 50-N202 Diagnostics and Flow Visu- alization Chair: Bruan Schmidt	Room: 50-T103 Shock Waves in Internal Flows Chair: Sannu Molder	Room: 50-T105 Shock/Boundary Layer In- teraction Chair: Zhufei Li	Room: 50-S201 Nozzle Flows and Super- sonic Jets Chair: Andrea Sansica	Room: 50-C207 Chemically Reactive Flows Chair: Yu Liu	Room: 49-313A Blast Waves Chair: Marianne G. Omana
Tue 8 July 09:4 9:40	Chair: Prof Joanna Austin Chair: Prof Joanna Austin 0 - 11:00 Room: 50-N201 Atmospheric Entry Chair: Savio Poovathingal Spectroscopic Measurements	Room: 50-N202 Diagnostics and Flow Visu- alization Chair: Bryan Schmidt Non-Equilibrium Nitric Oxide	Room: 50-T103 Shock Waves in Internal Flows Chair: Sannu Molder Large-eddy simulation of	dies Room: 50-T105 Shock/Boundary Layer In- teraction Chair: Zhufei Li Investigation of Roughness	Room: 50-S201 Nozzle Flows and Super- sonic Jets Chair: Andrea Sansica Numerical Study of Super-	Room: 50-C207 Chemically Reactive Flows Chair: Yu Liu Shock and blast pyrolysis of	Room: 49-313A Blast Waves Chair: Marianne G. Omang An apparatus for generat-
Tue 8 July 09:4	Chair: 9: 767 Joanna Austin Chair: 9: 767 Joanna Austin 0 - 11:00 Room: 50-N201 Atmospheric Entry Chair: Savio Poovathingal Spectroscopic Measurements of Shock Layer around the Cansule Model with Hollow	Room: 50-N202 Diagnostics and Flow Visu- alization Chair: Bryan Schmidt Non-Equilibrium Nitric Oxide Thermometry, Partial Pres- sure, and Velocity Measure-	Room: 50-T103 Shock Waves in Internal Flows Chair: Sannu Molder Large-eddy simulation of shock-train dynamics in a cavity-stabilised ramiet en-	dies Room: 50-T105 Shock/Boundary Layer In- teraction Chair: Zhufei Li Investigation of Roughness Elements on Oblique Shock Wave Boundary Layer Inter-	Room: 50-S201 Nozzle Flows and Super- sonic Jets Chair: Andrea Sansica Numerical Study of Super- sonic Exhaust Jet Flow Pat- terns (305)	Room: 50-C207 Chemically Reactive Flows Chair: Yu Liu Shock and blast pyrolysis of methane: a mini review (54)	Room: 49-313A Blast Waves Chair: Marianne G. Omang An apparatus for generat- ing reproducible and scalable shock wayes in the free field
Tue 8 July 09:4	Chair: Prof Joanna Austin Chair: Prof Joanna Austin 0 - 11:00 Room: 50-N201 Atmospheric Entry Chair: Savio Poovathingal Spectroscopic Measurements of Shock Layer around the Capsule Model with Hollow Fiber Probe (350)	Room: 50-N202 Diagnostics and Flow Visu- alization Chair: Bryan Schmidt Non-Equilibrium Nitric Oxide Thermometry, Partial Pres- sure, and Velocity Measure- ments at 100 kHz in a Hyper-	Room: 50-T103 Shock Waves in Internal Flows Chair: Sannu Molder Large-eddy simulation of shock-train dynamics in a cavity-stabilised ramjet en- gine (38)	Room: 50-T105 Shock/Boundary Layer In- teraction Chair: Zhufei Li Investigation of Roughness Elements on Oblique Shock Wave Boundary Layer Inter- action (392)	Room: 50-S201 Nozzle Flows and Super- sonic Jets Chair: Andrea Sansica Numerical Study of Super- sonic Exhaust Jet Flow Pat- terns (305)	Room: 50-C207 Chemically Reactive Flows Chair: Yu Liu Shock and blast pyrolysis of methane: a mini review (54)	Room: 49-313A Blast Waves Chair: Marianne G. Omang An apparatus for generat- ing reproducible and scalable shock waves in the free field (61)
Tue 8 July 09:4	Chair: Prof Joanna Austin Chair: Prof Joanna Austin 0 - 11:00 Room: 50-N201 Atmospheric Entry Chair: Savio Poovathingal Spectroscopic Measurements of Shock Layer around the Capsule Model with Hollow Fiber Probe (350) Satashi Namum Hiraki	Room: 50-N202 Diagnostics and Flow Visu- alization Chair: Bryan Schmidt Non-Equilibrium Nitric Oxide Thermometry, Partial Pres- sure, and Velocity Measure- ments at 100 kHz in a Hyper- sonic Shock Tunnel (443) Ionethen Gibeen Elizab Ians	Room: 50-T103 Shock Waves in Internal Flows Chair: Sannu Molder Large-eddy simulation of shock-train dynamics in a cavity-stabilised ramjet en- gine (38) (S) Tin-Hang Un Salvador	Room: 50-T105 Shock/Boundary Layer In- teraction Chair: Zhufei Li Investigation of Roughness Elements on Oblique Shock Wave Boundary Layer Inter- action (392) (S) Akash Mande	Room: 50-S201 Nozzle Flows and Super- sonic Jets Chair: Andrea Sansica Numerical Study of Super- sonic Exhaust Jet Flow Pat- terns (305) (S) Juan Sebastian Servata Ortiz	Room: 50-C207 Chemically Reactive Flows Chair: Yu Liu Shock and blast pyrolysis of methane: a mini review (54)	Room: 49-313A Blast Waves Chair: Marianne G. Omang An apparatus for generat- ing reproducible and scalable shock waves in the free field (61) (S) Marco Gerbeit Henrik See.
Tue 8 July 09:4	 Chair: Prof Joanna Austin Chair: Prof Joanna Austin Chair: Savio Poovathingal Spectroscopic Measurements of Shock Layer around the Capsule Model with Hollow Fiber Probe (350) Satoshi Nomura, Hiroki Takayanagi, Takumi Futohashi 	Room: 50-N202 Diagnostics and Flow Visu- alization Chair: Bryan Schmidt Non-Equilibrium Nitric Oxide Thermometry, Partial Pres- sure, and Velocity Measure- ments at 100 kHz in a Hyper- sonic Shock Tunnel (443) Jonathan Güwey, Elijah Jans, Bradley Lyon, Charley Downing,	Room: 50-T103 Shock Waves in Internal Flows Chair: Sannu Molder Large-eddy simulation of shock-train dynamics in a cavity-stabilised ramjet en- gine (38) (S) Tin-Hang Un, Salvador Navarro-Martinez	Room: 50-T105 Shock/Boundary Layer In- teraction Chair: Zhufei Li Investigation of Roughness Elements on Oblique Shock Wave Boundary Layer Inter- action (392) (S) Akash Marade	Room: 50-S201 Nozzle Flows and Supersonic Jets Chair: Andrea Sansica Numerical Study of Supersonic Exhaust Jet Flow Patterns (305) (S) Juan Sebastian Serrato Ortiz, Sylvester Abanteriba, Yan Ding,	Room: 50-C207 Chemically Reactive Flows Chair: Yu Liu Shock and blast pyrolysis of methane: a mini review (54) Frank Lu, Ananthkumar Jayamani	Room: 49-313A Blast Waves Chair: Marianne G. Omang An apparatus for generat- ing reproducible and scalable shock waves in the free field (61) (S) Marco Gerbeit, Henrik See- ber, Dennis Grasse, Marcel Don-
Tue 8 July 09:4	 Chair: Prof Joanna Austin Chair: Prof Joanna Austin Chair: Savio Poovathingal Spectroscopic Measurements of Shock Layer around the Capsule Model with Hollow Fiber Probe (350) Satoshi Nomura, Hiroki Takayanagi, Takumi Futohashi 	Room: 50-N202 Diagnostics and Flow Visu- alization Chair: Bryan Schmidt Non-Equilibrium Nitric Oxide Thermometry, Partial Pres- sure, and Velocity Measure- ments at 100 kHz in a Hyper- sonic Shock Tunnel (443) Jonathan Gilvey, Elijah Jans, Bradley Lyon, Charley Downing, Kyle Lynch, Justin Wagner, Christopher Galdenstein	Room: 50-T103 Shock Waves in Internal Plows Chair: Sannu Molder Large-eddy simulation of shock-train dynamics in a cavity-stabilised ramjet en- gine (38) (S) Tin-Hang Un, Salvador Navarro-Martinez	Room: 50-T105 Shock/Boundary Layer In- teraction Chair: <i>Zhufei Li</i> Investigation of Roughness Elements on Oblique Shock Wave Boundary Layer Inter- action (392) (S) Akash Marade	Room: 50-S201 Nozzle Flows and Supersonic Jets Chair: Andrea Sansica Numerical Study of Supersonic Exhaust Jet Flow Patterns (305) (S) Juan Sebastian Serrato Ortiz, Sylvester Abanteriba, Yan Ding, Ralf Stark, Justin Hardi, Jan Schmdel Thomas Esch	Room: 50-C207 Chemically Reactive Flows Chair: Yu Liu Shock and blast pyrolysis of methane: a mini review (54) Frank Lu, Ananthkumar Jayamani	Room: 49-313A Blast Waves Chair: Marianne G. Omang An apparatus for generat- ing reproducible and scalable shock waves in the free field (61) (S) Marco Gerbeit, Henrik See- ber, Dennis Grasse, Marcel Don- ner, Daniel Krentel
Tue 8 July 09:4	 Chair: Prof Joanna Austin Chair: Prof Joanna Austin Chair: Savio Poovathingal Spectroscopic Measurements of Shock Layer around the Capsule Model with Hollow Fiber Probe (350) Satoshi Nomura, Hiroki Takayanagi, Takumi Futohashi Direct Simulation Monte 	Room: 50-N202 Diagnostics and Flow Visu- alization Chair: Bryan Schmidt Non-Equilibrium Nitric Oxide Thermometry, Partial Pres- sure, and Velocity Measure- ments at 100 kHz in a Hyper- sonic Shock Tunnel (443) Jonathan Gilvey, Elijah Jans, Bradley Lyon, Charley Downing, Kyle Lynch, Justin Wagner, Christopher Goldenstein Development of CO Ther-	Room: 50-T103 Shock Waves in Internal Flows Chair: Sannu Molder Large-eddy simulation of shock-train dynamics in a cavity-stabilised ramjet en- gine (38) (S) Tin-Hang Un, Salvador Navarro-Martinez Mechanism of Shock Transi-	Room: 50-T105 Shock/Boundary Layer In- teraction Chair: <i>Zhufei Li</i> Investigation of Roughness Elements on Oblique Shock Wave Boundary Layer Inter- action (392) (S) Akash Marade Numerical Study on Mitigat-	Room: 50-S201 Nozzle Flows and Supersonic Jets Chair: Andrea Sansica Numerical Study of Supersonic Exhaust Jet Flow Patterns (305) (S) Juan Sebastian Servato Ortiz, Sylvester Abanteriba, Yan Ding, Ralf Stark, Justin Hardi, Jan Schyndel, Thomas Esch Experimental Study of Super-	Room: 50-C207 Chemically Reactive Flows Chair: Yu Liu Shock and blast pyrolysis of methane: a mini review (54) Frank Lu, Ananthkumar Jayamani Development and Appli-	Room: 49-313A Blast Waves Chair: Marianne G. Omang An apparatus for generat- ing reproducible and scalable shock waves in the free field (61) (S) Marco Gerbeit, Henrik See- ber, Dennis Grasse, Marcel Don- ner, Daniel Krentel Blast Waves Produced by Col-
Tue 8 July 09:4	Chair: Prof Joanna Austin Chair: Prof Joanna Austin Constant Science Constant Science Constant Science Chair: Savio Poovathingal Spectroscopic Measurements of Shock Layer around the Capsule Model with Hollow Fiber Probe (350) Satoshi Nomura, Hiroki Takayanagi, Takumi Futohashi Direct Simulation Monte Carlo study of Hypersonic Flow During Atmospheric	Room: 50-N202 Diagnostics and Flow Visu- alization Chair: Bryan Schmidt Non-Equilibrium Nitric Oxide Thermometry, Partial Pres- sure, and Velocity Measure- ments at 100 kHz in a Hyper- sonic Shock Tunnel (443) Jonathan Gibeey, Elijah Jans, Bradley Lyon, Charley Downing, Kyle Lynch, Justin Wagner, Christopher Goldenstein Development of CO Ther- mometry for Temperature Measurements core 3000.6000	Room: 50-T103 Shock Waves in Internal Flows Chair: Sannu Molder Large-eddy simulation of shock-train dynamics in a cavity-stabilised ramjet en- gine (38) (S) Tin-Hang Un, Salvador Navarro-Martinez Mechanism of Shock Transi- tion from RR to MR with Sin- gle and Tandem Lowid Trics	Room: 50-T105 Shock/Boundary Layer In- teraction Chair: <i>Shufei Li</i> Investigation of Roughness Elements on Oblique Shock Wave Boundary Layer Inter- action (392) (S) Akash Marade Numerical Study on Mitigat- ing Swept Shock-Induced Sep- aration Using Air Lat Yoster	Room: 50-S201 Nozzle Flows and Supersonic Jets Chair: Andrea Sansica Numerical Study of Supersonic Exhaust Jet Flow Patterns (305) (S) Juan Sebastian Serrato Ortiz, Sylvester Abanteriba, Yan Ding, Ralf Stark, Justin Hardi, Jan Schyndel, Thomas Esch Experimental Study of Supersonic Exhaust Jet Flow Patterns (2)	Room: 50-C207 Chemically Reactive Flows Chair: Yu Liu Shock and blast pyrolysis of methane: a mini review (54) Frank Lu, Ananthkumar Jayamani Development and Appli- cations of an A Posteriori Two.Dimensional Solvas for	Room: 49-313A Blast Waves Chair: Marianne G. Omang An apparatus for generat- ing reproducible and scalable shock waves in the free field (61) (S) Marco Gerbeit, Henrik See- ber, Dennis Grasse, Marcel Don- ner, Daniel Krentel Blast Waves Produced by Col- liding Spheres (198)
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	Room: 50-N201	Room: 50-N202	Room: 50-T103	Room: 50-T105	Room: 50-S201	Room: 50-C207	Room: 49-313A
	Atmospheric Entry	Facilities and Instrumenta-	Multiphase Flows	Richtmyer-Meshkov Insta-	Supersonic and Hypersonic	Detonation, Combustion	Numerical Methods
		tion		bility	Flows	and Ignition	
11.90	Chair: Hiroki Nagai	Chair: David Mee	Chair: Hong Luo	Chair: Georges Jourdan	Chair: Rajesh Ranjan	Chair: Toshiharu Mizukaki	Chair: Rowan Gollan
11:30	Laver Beconstruction from a	for Spectroscopy and Kinetics	Tandem injection of supercrit-	ity at gas/viscoelastic mate-	Material Ablation Studies	surement of Supercritically	compressible jet impingement
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					(84)	in a Shock Tube Under Scram-	oped turbulence model (398)
					× /	jet Combustor Relevant Oper-	
						ating Conditions (329)	
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		Konald Hanson	narayan, 1m Muruganandam	Xisheng Luo	Gayeon Noh, Hojun You, Jaegang	Gopalan	Yu
11,50	Ultra High Speed Emission	Statistical Determination of	Evolution of Wall attached	Attenuation of the single	Effect of Bounolds number on	Investigation of V shaped ini	Speatral Fitting with Digon
11.50	Spectroscopy in the X2 Ex-	Quasi-Steady Test Time in	Droplets under Shock Wave	mode perturbation growth for	unsteady instabilities in hy-	tiation scheme of standing	ous Conservation Constraints
	pansion Tube (259)	Shock and Expansion Tube	Impact (321)	the shocked multi-interfaces	personic cone-step flow (447)	detonation engine (178)	(409)
		Flows (235)		system via double waves im-			
				pacts (129)			
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	Timothy Mcintyre, Chris James	James, Richard Gareth Morgan,	Mu, Ting Si	Xisheng Luo	Chase Jenquin, Eric Cui, Joseph	Chongguang Shi, Yancheng You	Justin Clarke, Luca Di Mare,
12,10	Experimental and Numerical	Richard Gareth Morgan	Partiala Pasalyad Numariaal	Ronativo Rightmyon Moghkov	Jewell Experimental Investigation on	Wall Temperature Depen	Matthew Mcguvray Modelling Free pictor Driver
12.10	Study of CO2 radiation in	sponse of a Static Pressure	Simulation of a Particle Lift-	Instability at Hydrogen-Air	Unstart and Bestart phenom-	dence of Flame Structure in	Impulse Facilities with the
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	Li, Jinping Li, Shizhong Zhang,	Austin, Hans Hornung		Wan Cheng, Pengfei Yang,	oung Yang, Kyungjae Lee	Venkat Raman	Gollan, Carloyn Jacobs, Richard
12:30	Anaoyuan Zhang, Xin Lin	Feasibility of ITO This Eiler	High Mach Number A	Richtmyer-Meshkov In-t-	Induced Transition Strat-	Effect of Multiple Deteration	Boundary Condition barred
12.30	gen Shock Layer Computed	Gauges for Impulse Facilities	breakup (191)	bility at Quasi-Single-Mode	over a 2D Wedge at Hyper-	on the Detonation Parameters	Machine Learning Algorithm
	with a Vibrational-State Spe-	(405)		Interfaces Accelerated by a	sonic Speed (301)	in Rotating Detonation En-	for Fast Prediction of Chem-
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							Flows in Rarefied Atmosphere
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	Builei	inkumar Jayamani	Nick Farziale	Ting Si, Aisneng Luo, He Wang	nen, Soumya Nanaa	ikkurini	Mankodi Niranian Sahoo
12:50 - 13:50	Lunch						in annous, iterangan banoo
13:50 - 14:50	Room: 49-200						
	Plenary 4: Prof Matthew Mc	Gilvray, Development, experiment	ts and a-posteriori modelling of sl	lock tubes			
	Plenary 4: Prof Matthew Mc Chair: Prof Christian Mundt	Gilvray, Development, experimen	ts and a-posteriori modelling of sl	nock tubes			
14:50 - 15:20	Plenary 4: Prof Matthew Mc Chair: Prof Christian Mundt Coffee Break	Gilvray , Development, experimen	ts and a-posteriori modelling of sl	ock tubes			
14:50 - 15:20 Tue 8 July 15:2	Plenary 4: Prof Matthew Mc Chair: Prof Christian Mundt Coffee Break 20 - 16:20 Boom: 50-N201	Gilvray, Development, experimen	ts and a-posteriori modelling of sl	Room: 50.T105	Boom: 50.5201	Boom: 50.C207	Boom: 49-3134
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14:50 - 15:20 Tue 8 July 15:2	Plenary 4: Prof Matthew Mc Chair: Prof Christian Mundt Coffee Break 20 - 16:20 Room: 50-N201 Nozzle Flows and Super- sonic Jets Chair: Somnath Ghosh	Gilvray, Development, experimen Room: 50-N202 Facilities and Instrumenta- tion Chair: Krishna Talluru	ts and a-posteriori modelling of sl Room: 50-T103 Medical and Biological Ap- plications Chair: <i>Gopalan Jagadeesh</i>	Room: 50-T105 Richtmyer-Meshkov Insta- bility Chair: He Wang	Room: 50-S201 Supersonic and Hypersonic Flows Chair: Moritz Ertl	Room: 50-C207 Chemical Kinetics Chair: Sung Min Jo	Room: 49-313A Plasmadynamics and Mag- netohydrodynamics Chair: Kyle Hanquist
14:50 - 15:20 Tue 8 July 15:2	Plenary 4: Prof Matthew Mc Chair: Prof Christian Mundt 20 - 16:20 Room: 50-N201 Nozzle Flows and Super- sonic Jets Chair: Somnath Ghosh Mid-infrared Laser Absorp-	Gilvray, Development, experimen Room: 50-N202 Facilities and Instrumenta- tion Chair: Krishna Talluru Heat Transfer Measurements	ts and a-posteriori modelling of sl Room: 50-T103 Medical and Biological Ap- plications Chair: Gopalan Jagadeesh Shock Wave Impact Effects	Room: 50-T105 Richtmyer-Meshkov Insta- bility Chair: <i>He Wang</i> Vortex Interactions and Mix-	Room: 50-S201 Supersonic and Hypersonic Flows Chair: Moritz Ertl Computations of Turbulent	Room: 50-C207 Chemical Kinetics Chair: Sung Min Jo Development of a Multi-	Room: 49-313A Plasmadynamics and Mag- netohydrodynamics Chair: Kyle Hanquist Electron Plasma Waves /
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Thursday 10 Ju	ly Deile service Room 5	0 77902					
08:40 - 09:40	Room: 50-T203	J 1: 1: 1: 1: 1: 1: 1:	0:1				
	Chair: Prof Ron Hanson	e, Laser diagnostics applications to	5 Hight testing				
Thu 10 July 09	:40 - 11:00 Room: 50-N201	Room: 50-N202	Room: 50-T103	Room: 50-T105	Room: 50-S201	Room: 50-C207	Room: 49-313A
	Atmospheric Entry	Diagnostics and Flow Visu- alization	Multiphase Flows	Shock/Boundary Layer In- teraction	Supersonic and Hypersonic	Detonation, Combustion	Numerical Methods
	Chair: Eduardo Trifoni	Chair: Tristan Vanyai	Chair: Juan Sebastian Rubio	Chair: Srisha Rao M V	Chair: Peixu Guo	Chair: Shrey Trivedi	Chair: Nicholas Gibbons
9:40	Validation of CO2 Chemi- cal Kinetics in Expanding and Recombining High Den- sity Mars Entry Conditions (445)	Quantitative visualization of flow field behind weak shock waves with parallel phase- shift interferometry (238)	Development of a High- Fidelity Eulerian-Lagrangian Framework for High-enthalpy Particle-Laden Plasmas (95)	Hypersonic Transitional Ex- periments on a 10.9 deg Cone by Using ALTP Sensors for Direct Heat-Flux and Temper- ature Measurements (183)	Suppression of acoustic wave using passive device in super- sonic cavity with sub-cavity. (313)	Numerical Simulation of Shock Transmission from the Exit of a Detonation Tube (121)	A machine learning- augmented CFD framework for achieving DSMC-level ac- curacy in shock flow analysis of diatomic gases (149)
	(S) Mragank Singh, Chris James, Tim Mcintyre, Tim Mcintyre, Richard Gareth Morgan, Richard Gareth Morgan	(5) Yuki Iwamoto, Kiyonobu Ohtani, Toshiharu Mizukaki	(5) Hyeonwoo Nam, Sung Min Jo	(S) Clauala Hofmann, Simon Kaneider, Tim RDiger, Jan-Erik Brune, Christian Mundt, Lukas Jakobs	Mitali Joshi, Chertshma Mallavarapu, Karthick S. K., Hideaki Ogawa, Bamelari Dkhar	(5) Muin Martin, Eouzer Tarik Balci, Elaine Oran	Gagan Gary, lapan Mankoai, kho Shin Myong
10:00	Force and Moment Coeffi- cients of a Cube Interacting with a Ramp Shock at Mach 7 (276)	Development of Fast-response Temperature Sensitive Paint and Its Application to Shock Tube (110)	Investigating Pseudosteady Reflections in Dusty Flows using Meshless Framework (336)	Numerical Analysis of the Reflected Shock Region in a Single-Diaphragm Shock Tube Modeled with Realistic Diaphragm Opening Profiles (353)	Film Cooling-Induced Transi- tion in High-Speed Laminar Boundary Layers: Transition Modeling and Analysis (212)	Why the standard devices for extinguishing detonation in pipelines can work (155)	A Hybrid Genetic Algorithm- Pareto Framework for Opti- mizing Film Cooling in Hyper- sonic Flows (209)
	(S) Gerard Armstrong, David Buttsworth, Fabian Zander	(S) Jinyoung Kim, Mithat Engin, Masaki Okawa, Bok Jik Lee, Tsub- asa Ikami, Hiroki Nagai	(S) Avinash Singh, T. Jayachan- dran, Rajesh G., Shubham Kailas Vyas	(S) Touqeer Anwar Kashif, Ja- nardhanraj Subburaj, Aamir Fa- rooq	Diviaharshavardini R C, Davoud Hosseinzadeh, Jayachandran T, Rajesh G, Ikhyun Kim	Zbigniew Walenta, Agnieszka Slow- icka	(S) Davoud Hosseinzadeh, Divia- harshavardini R C, Ikhyun Kim
10:20	Transpiration Cooling Using 3D-Printed Porous Silicon Carbide (189)	Development of an Integrated Schlieren-FLDI System for Characterizing High-Speed Flows in the T4 Stalker Tube (289)	Effect of Sub-models in a High-Fidelity Hyperbolic Sys- tem of Equations on Predict- ing Characteristics of Craters Formed on a Granular Soil by a Supersonic Impinging Jet	Resolvent analysis of hyper- sonic compression corner flow under crossflow effect (12)	Experimental Study on Boundary Layer Transition Delay Using Porous Surfaces in a Hypersonic Flow (168)	Computations on Supersonic Combustion for an Orifice Hydrogen Injection into Airstream of Mach 8 and 10 (448)	Low Cost, A-posteriori Ex- pansion Tunnel Freestream Modelling with Non- Equilibrium (158)
	(S) William Matthews, Ivett Leyva, Hassan Saad Ifti, Garrett Yoder, Sean Ryan, John Howard	(S) Maxwell Young, Ramprakash Ananthapadmanaban, Anand Veer- aragavan, Matthew Trudgian	(10) Josette Bellan	Chun Kit Uy, Chih-Yung Wen Wen, Jiaao Hao, Jiaao Hao	(S) Junhyuk Nam, Jungmu Hur, Jinhwi Kim, Jinyoung Kim, Bok Jik Lee	Zhuhe Zhang, Shengli Xu	Joseph Steer, Luca Di Mare, Matthew Mcgilvray
10:40	Comparison of External Emission Spectroscopy to Through-model Fibre Optics for Radiation Measurements in X2 Expansion Tube. (303)	Spectral analysis of simulta- neous schlieren and shadow- graph measurements (173)	Wave Dynamics in Densely Packed Particles Subjected to Periodic Shock Wave Impact (156)	Experimental Investigation of Shock - Cavity Shear Layer Interaction in a Confined Su- personic Flow over a Ta- pered Cavity with Gas Injec-	Using Thermal Compression to Combust Simple Hydrocar- bon Fuels in Scramjets (307)	Universal Framework for Gaseous Detonation Propaga- tion and Initiation (109)	Characterization of Turbulent Transonic Buffet Using an Improved Hybrid Monotonic Upstream-Centered Scheme (162)
	(S) Robert Hawken, Chris James, Matthew Uren, Richard Morgan, Sam Lock, Yu Liu	Krishna Talluru, Harald Kleine	Pavel Utkin	 (S) Dwarakesh Madavan, Purna Ananthkrishnan, Pandian Sami- ayyan, Sriram Rengarajan, Malsur Dharavath 	(S) Vinay Dekkala, Vincent Wheatley, Nicholas Gibbons, Tristan Vanyai	Zonglin Jiang	Andrea Sansica, David Lusher, Keiichi Kitamura, Gaku Fukushima, Hashimoto At- sushi
11:00 - 11:30 Thu 10 July 11	Coffee Break :30 - 12:50						
	Room: 50-N201 Atmospheric Entry	Room: 50-N202 Facilities and Instrumenta-	Room: 50-T103 Shock Waves in Dongo/Rangfod Cases	Room: 50-T105 Shock/Boundary Layer In-	Room: 50-S201 Supersonic and Hypersonic	Room: 50-C207 Detonation, Combustion	Room: 49-313A Shock Wave Reflection, In-
	Chair: Hassan Saad Ifti	Chair: Chris James	Chair: Medipati Chandrasekhar	Chair: Sriram Rengarajan	Chair: Koen Groot	Chair: Edyta Dzieminska	Chair: Sivaprasad Gangadharan
11:30	Preliminary X2 Expansion Tube Experiments Investi- gating Radiation at Peak Velocity Uranus Entry Condi- tions (172)	Initial Shakedown Testing of the Stanford High-enthalpy Optical Tube/Tunnel (SHOTT) (82)	Rarefaction waves in the dense vapors of D6 (126)	Correlation for the predic- tion of separation length in imping oblique- shock/turbulent-boundary- layer interactions (320)	Aerodynamic heating charac- teristics of V-shaped edge at hypersonic speeds (396)	Effects of Initiation Config- uration on Development and Propagation of Detonation Waves (93)	Rylov's Conjecture and a Sin- gularity (5)
	(S) Daisy-May Joslyn, Chris James, Samuel Lock, Matthew Uren, Richard Morgan, Yu Liu	(S) Tal Schwartz, Alexis Thoeny, Konstantinos Kotsarinis, Jin Lee, Padmanabha Simha, Eric Zhao, Sarah Baird, Jason Lin, Christo- pher Strand, Ronald Hanson	Chandrasekhar Medipati, Chiara Falsetti, Piero Colonna	Vinay B A, Santanu Ghosh, Muru- ganandam T M	Guilai Han, Shicheng Zhan	(S) Jayson Small, Liwei Zhang	Sannu Molder, Amin Gulamhus- sein, Ben Shoesmith
11:50	Laser Absorption Spec- troscopy to Magnetohydro- dynamic Aerobraking in an Expansion Tube (285)	Characterization of Modified Shock Tunnel (S1) (241)	Shock Driven Mixing of Active Scalars (304)	Aerothermal Symmetry in Hy- personic Transitional Swept Shock-Wave/Boundary-Layer Interactions (114)	Three-Dimensional Receptiv- ity of Hypersonic Boundary Layers over Sharp Wings (29)	Thermochemical Parameters Measurement in a High Mach Number Scramjet Engine Using Mid-Infrared Laser Ab- sorption Spectroscopy (253)	Time-Resolved Parametric Study of Shock Wave Reflec- tion from Wavy Walls (352)
	(S) Takeaki Muramatsu, Kohei Shimamura, Akira Kakami, Hi- roshi Katsurayama, David Gildfind	(S) Jithin Sreekumar, Honhar Gupta, Soumya Ranjan Nanda, Md Gulam Sarwar, Mohammed Ibrahim Sugarno	(S) Joaquim P Jossy, Prateek Gupta	Xu Liu, Di Peng, Jiaao Hao	(S) Jiachen Lu, Chun Kit Uy, Rui Zhao, Chih-Yung Wen Wen	(S) Renjie Li, Dong He, Xiaoyuan Zhang, Dongdong Meng, Xi Gong, Xin Lin, Fei Li	Randall Paton, Irshaad Mahomed, James Kamerman
12:10	Laser-based Absorption Measurements of Atomic Air Species Using a Ring- Amplified Shock Tube (39)	One- and Two-Dimensional Models of the HYPULSE Shock Tunnel (269)	Fokker-Planck Simulations of the SHEFEX II Vehicle (130)	Study on the Concept of Free Interaction of Super- sonic Flows over Compression Ramp (9)	Development of Inviscid Su- personic Flow in the Wake of a Circular Cylinder (275)	Experimental Study of a Rotating Detonation En- gine(RDE) with an applied Cooling Channel (273)	Experimental Study of Oblique-Shock/Bow-Shock Interaction with a Large-scale Test Model in Hypersonic Flows (163)
	Devin Merrell, Dylan Drescher, Zev Granowitz, Jesse Streicher, Christopher Strand, Ronald Han- son	(S) Matthew Bush, Adrian Flores, Joseph Jewell	Moritz Ertl, Leo Basov, Marius Franze	(S) John Chemmanoor Joseph, Lijo V, Heuy Dong Kim, Heuy Dong Kim	(S) Akshay Kumar Nandhan, Kr- ishna Talluru, Sudhir Laxman Gai	(S) Minsik Yun, Tae Seong Roh, Hyoung Jin Lee	Zongmin Hu, Yao Zhang, Shaolai Li
12:30	Role of Enthalpy on Hyperve- locity Mach Stem Turbulence (411)	Estimating Flow Conditions in a Stalker Tube for Con- ditions with Attenuating Pri- mary Shock Waves (226)	Collision and Reflection of Micro Shock Waves (251)	Transition Scenario in a Mach-6.5 Compression Ramp Flow (25)	Intermittency in hypersonic transitional and turbulent boundary layers (262)	Detonation initiation and propagation in stratified cracked ammonia (175)	Shock wave focusing of hemi- spherical shocks (73)
	Rodney Bowersox	David Mee	Ulrich Teubner, Walter Garen,	Shibin Cao, Qiu Wang	Krishna Talluru, David Petty, David Mee Anand Veenmaayan	Jie Sun, Yicun Wang, Huangwei Zhang	Marianne Omang, Knut Ove Havae

12:50 - 13:50	Lunch						
Thu 10 July							
13:50 - 14:50	Room: 49-200						
	Plenary 6: Prof Ivett Leyva, H	Perspectives on Hypersonics from :	my experiences at AFOSR and aca	ademia			
	Chair: Prof Joe Jewell						
14:50 - 15:20	Coffee Break						
Thu 10 July 15:	20 - 17:00						
	Room: 50-N201	Room: 50-N202	Room: 50-T103	Room: 50-T105	Room: 50-S201	Room: 50-C207	Room: 49-313A
	High Enthalpy Gas Dy-	Facilities and Instrumenta-	Shock Waves in Liquids	Shock/Boundary Layer In-	Supersonic and Hypersonic	Detonation, Combustion	Shock Wave Reflection, In-
	namics	tion (1)		teraction	Flows	and Ignition	teraction, and Focussing
15.00	Chair: Robert MacDermott	Chair: David Buttsworth	Chair: Kavitha Jayaram	Chair: Anana veeraragavan	Chair: Dong He	Chair: Zoigniew Walenta	Chair: Randall Paton
15:20	Numerical simulation of a	Miniaturisation of an Antenna	The Effect of Equation of	filme-Scale Aerodynamic Per-	Numerical study on the	Experimental Investigation of	Numerical Simulation of
	astrophysical jet issuing from	nole Microwaya Interforemetry	powelogity Water Entry (281)	Actuation and Its Control of	the percellel staged two	and Internations with Differ	dog Corner with Hydrogen
	an Active galactic puclei (274)	System (214)	pervelocity water Entry (281)	Small-Height Backward Step	stage-to-orbit vehicle during	and Interactions with Differ-	Air Mixture (397)
	an Active galactic fueler (214)	System (214)		Separation in Transonic Flow	hypersonic transverse stage	cht Media (212)	All Mixture (331)
				(120)	separation (154)		
	Ribhu Pal, Arnab Roy	(S) Sandy Goetjens, Toby Van	(S) Joshua Smith, Monal Pa-	Feng Ye, Jianlei Wang, Enbo Ju,	Yue Wang, Yunpeng Wang, Yiming	(S) Edyta Dzieminska, Sanjeev	(S) Henrik Thomas, Irenaus
	, , , , , , , , , , , , , , , , , , , ,	Den Herik, Chris James	tel, Manuel Viqueira-Moreira,	Xuanshi Meng	Liu	Kumar Mall	Wlokas, Andreas Kempf, Wojciech
			Matthew Sendrey, Premika Thasu,				Rudy
			Bryan Schmidt, Christoph Brehm				
15:40	Numerical Investigation of	L1d Simulation of a Hydro-	Experimental Investigation of	Hypersonic Shock	Experimental Investigation on	Numerical research on droplet	Shocks Interactions and Re-
	Shock Stand-off Distance in	gen Preheater for Supersonic	Hypervelocity Water Entry by	Wave/Boundary Layer In-	25-50 deg Double-cone Flow	deformation characteristics	flections During Startup Pro-
	Chlorine (429)	Combustion Studies (444)	Spherical Projectiles (196)	teractions on a Heated,	at Mach 6 (117)	within the gaseous multi-	cess of An Hypersonic Air-
				Compliant Clamped-Free-		dimensional detonation	Breathing Vehicle (72)
	(C) Balant Watt Bauan Caller	Beneralized Amerithean development	(C) Matthew Candress David	Clamped-Free Panel (268)	Via Li Zananan Chan Jiana Har	now-neid (63)	Error Aread Orneri Barry Vary Ci
	(S) Robert Wall, Rowan Gollan	David Mee	Schmidt Josh Smith Premika	Dumon Kirkputrick, Anarew Neely, Dulan Dooner, Charlie Hoke, Tim-	Lingo Hao	(S) Hanoing Zou, Fijue Wei, Shena Yu Bina Wana	chan
		Davia Mcc	Thasu	othy Beberniss David Buttsworth	51000 1100	Dicing Xa, Ding Wang	Chon
16:00	Temperature measurements in	Multi-Fidelity Theory and	Shock Wave Dynamics in Un-	Hypersonic Shock Wave-	Conjugate Heat Transfer Sim-	Experimental Investigation of	Shock Interactions on Asym-
	cylindrical shock wave conver-	Simulation of High-Enthalpy	derwater Copper Wire Explo-	Boundary Layer Interaction	ulation of High Enthalpy Re-	a Reacting Bidisperse Particle	metric V-shaped Blunt Lead-
	gence (151)	Shock Tubes (279)	sions (377)	Experiments on a Cone-	acting Flows over a Double	Curtain Under Extreme Con-	ing Edges (357)
				Slice-Wedge over a Range of	Wedge at Mach 7 (364)	ditions (439)	
				Enthalpies (434)			
	(S) Sourabh Bhardwaj, Nicholas	Aaron Larsen, Kyle Hanquist	Michael Liverts, Francesc Hern-	Justin Wagner, Elijah Jans, Kyle	(S) Ladin Uluakan, Bayram Celik	Juan Rubio, Kyle Daniel, Justin	(S) Yu Chen, Zhufei Li
	Apazidis, Michael Liverts		Ndez Garcia, SebastiN Rojas Mata	Daniel, William Swain, Kyle		Wagner	
10.00				Lynch			
16:20	nermochemical Nonequilib-	tigal Through model	Phonomona and Rubble For	Analysis of large-scale span-	Numerical studies of high en-	induction gone longth in	Concerned Convity and Convey
	Expanding Air Flows (51)	Temperature-based Sur-	mation Induced by Impact	aration hubbles (46)	shocktube (244)	hydrogen-air detonations	Bump in the Weak Shock Do-
	Expanding An Flows (01)	face Heat Flux Sensor for	Bending of Bar Materials in	anation bubbles (40)	SHOCKTUDE (244)	with increasing Mach number	main (146)
		Hypervelocity Flows (207)	Contact with the Water Sur-			using DSMC (43)	
		51	face (71)				
	(S) Tia Chen, Sangdi Gu, Zhuo	(S) Chengxin Yu, David Gildfind,	Akihisa Abe, Jinichi Koue, Take-	(S) Zhen Zhang, Xin Li, Jiaao	Ribhu Pal, Debayan Das, Arnab	Shrey Trivedi, John K. Harvey,	Vedant Vijaykrishnan, Thara
	Liu, Chihyung Wen, Kai Luo, Fei	David Mee, Tim Mcintyre, Tim	hiro Fujimoto	Hao, Jiaao Hao	Roy, Lars Jepsen, Walter Garen,	Jacqueline H. Chen	Reshma, Rajesh G. , S Vishnu
	Li, Qiu Wang, Renjie Li	Mcintyre			Ulrich Teubner		Prasad, Vinoth P, Vinoth P
16:40	Dissociation in the Stagnation	Implementation of Ionisation	Pseudosteady shock refrac-	Control of Swept Shock Wave	On the transition reversal on a	Towards high-speed metal	Synchrotron Radiography of
	Point Boundary Layer (223)	Probe Based Shock Speed	tions over air-silicon oil and	/ Boundary Layer Interactions	blunted plate at Mach 4 (199)	combustion (277)	Wire-Driven Cylindrical and
		Sensor in the X2 Expansion	air-glycerin interfaces (330)	using Air-Jet Vortex Genera-			Semi-Cylindrical Shock Waves
		Tube (147)		tors (351)			interacting with a Bubble
	Sanadi Gu	Callagan Wing Chris Jamas	Somesh Putti Md Asif Ambre	Bhavesh Tongaria Deenak Promo	(S) Vuen Lee Jiago Hao	Nicholas Kanizai Samuel	(120) (S) Francesc HernNder Carrie
	bungai Gu	Daisu-May Joslun	Serene Rai C. Mano M. Rojesh G	Ramaswamu, Sriram Rengarajan	(b) Then Dee, Juno Huo	Cousens, Donna Capararo	Nicholas Anazidis, Michael Liverts
		g in ag o ongn		Anne-Marie Schreuer		contraction pointer corporato	
From 18:00	Banquet				1	1	

Friday 11 July	10.10.00						
FIT II July 08.4	Boom: 50-N201	Boom: 50-N202	Boom: 50-T103	Boom: 50-T105	Boom: 50-S201	Boom: 50-C207	Boom: 49-313A
	Propulsion	Facilities and Instrumenta-	Shock Wayes in Internal	Bichtmyer-Meshkoy Insta-	Supersonic and Hypersonic	Shock/Boundary Layer In-	Shock Wave Beflection, In-
	F	tion	Flows /Multiphase Flows	bility	Flows	teraction	teraction, and Focussing
	Chair: Andrew Neely	Chair: Shengkai Wang	Chair: Rajesh Gopalapillai	Chair: Jeff Jacobs	Chair: Karthick Sengunthapuram	Chair: Ramprakash Ananthapad-	Chair: Harald Kleine
					Kandasamy	manaban	
8:40	Supersonic Combustor Test	Qualification of the NASA	Investigating the Relationship	Time-Resolved Particle Image	Base Pressure Establishment	Simultaneous Fluid and	Investigating the Dynamics
	Facility Providing Clean Air	Ames Low Density Shock	Between Cavity Shape and	Velocimetry Measurements	Time of Slender Sphere-Cones	Structure Measurements of an	of Transmitted and Reflected
	mity Measurement (426)	Tube (104)	sonic Flow (359)	Bayleigh-Taylor Instability	in Hypersonic Flow (105)	Laver Interaction in Mach 4	Ducts with Varying Contrac-
	mity measurement (420)		some riow. (565)	(242)		Flow (161)	tion Geometries (77)
	Inyoung Yang, Sang-Hun Lee,	Brett Cruden, Andrea Fagnani	(S) Anagha Kuniyil, Karthick Sk.	Weston Meyers, Kevin Ferguson,	(S) Liam Mcquellin, Luke Doherty	(S) Alex Acosta, Ying Luo, Joanna	(S) Yoav Gichon, Hemanth Chan-
	Bo-Yeon Kim, Kyung-Won Park,	· -	Niranjan Ghaisas, Gnanaprakash	Jeffrey Jacobs		Austin	dravamsi, Omri Ram
	Hyun-Seung Lee		K, Rajesh Kumar, Jaysinh J. Pa-				
			tel				<u>~</u>
9:00	Performance Evaluation of	The Detonation Research Test	Experimental Verification and	Suppression of hydrodynamic	Experimental Investigation of	Effect of dynamic variation	Shock-particle interaction in
	nation Engine for a Model	Facility Going Opscale (155)	based Curved Shock Theory	various Atwood numbers via	Osculating Cone Waverider	induced Fluid-Structure In-	sults (152)
	Rocket Launch (384)		(26)	a same-side second shock im-	(118)	teraction (406)	Suits (IOE)
				pact (136)		· · /	
	(S) Shinji Mabuchi, Toshiharu	Elaine Oran, Scott Jackson	(S) Mengfei Zhang, Chongguang	(S) Yinuo Xing, Zhigang Zhai,	(S) P V Karthikeya Bharadwaj	(S) Rahul Kapse	(S) Georges Jourdan, Baptiste
	Mizukaki, Rintaro Suzuki, Naoki		Shi, Yancheng You	Xisheng Luo, He Wang			Theurier, Christian Mariani, Marc
	Okamoto, Michael Kawalec, Edyta						Vandenboomgaerde
9.20	Eorced Dual-Mode Combus-	Development of Multiphase	Effect of the Initial Di-	Effects of Mach Numbers on	Exploring Control Strategy to	The effect of sweep angle on	A Study on Head-on-Head
0.20	tion in an Accelerator Scram-	Shock Tube Facility and	aphragm Opening Phase on	Reactive and Inert Shock-	Mitigate Unsteadiness in Hy-	shock-induced cellular sepa-	Collision of Expansion Waves
	jet Flowpath (290)	Shock Processing of Natural	the Shock Parameters Ob-	Induced Double-Layer Gas	personic Cavity (297)	ration bubbles in wide-span	(327)
		Sand from Australian Desert	tained in a Single-Diaphragm	Cylinders (123)		3D turbulent transonic aero-	
			Shock Tube (349)			foil buffet (3)	
	Iristan Vanyai, Damian Curran, Vincent Wheatles:	Dr. Jayaram Vishakantaiah, Na-	(5) Janardhanraj Subburaj, Touqueer Anwar Kashif A	(5) Ain Li, Chih-Yung Wen Wen,	ian Nanda Mahammad Ibn-Li-	Davia Lusher, Andrea Sansica	Kajesn G, S Vishnu Prasad, Anbu Serene Bai C Mana M Vinath P
	Vincent Wheatiey	garaj mariyappa, Kaonna sayaram	Farooa	51440 1140	Sugarno		Vinoth P
9:40	Theoretical Analysis on the	Experimental and Numerical	Characterization of Twin Im-	Shock-tube experiments on	Investigation of shock-shock	Three-dimensional Shockwave	Characterization of Edney
	Performance of Ram-Rotor	Investigation of Shock Wave	pinging Liquid Jet at Super-	strong-shock-driven single-	interaction in variable Mach	Boundary Layer Interactions	Shock-Shock Interactions in
	Detonation Engine (15)	Formation and Propagation	sonic Air Crossflow (378)	mode Richtmyer-Meshkov	number flow with symmetric	(179)	Supersonic Flow (386)
		in a Miniature 20 mm Di-		instability (141)	and asymmetric shock gener-		
	Haochena Wen Bina Wana	(S) Janardhanrai Subhurai	Srinivasa Narasimman V B	He Wana Shuaishuai Jiana Wei	Ators (355) Vijaugkrishnan Venkatesan Muru-	(S) Raja Janmejay Srisha Rao	Erul Shaii Muruaanandam Tm
	nuocheng wen, bing wung	Touqueer Anwar Kashif. Serban	Stitutusu Walastitiman V D	Cai. Ting Si. Xisheng Luo	aanandam T. M.	Jagadeesh Gopalan	Sebastian Ds. Madhura Sabhahit.
		Rotaru, Guido Dessy, Ahmed			3		Snega Manjini
		Habib, Mohanad Shamsan, Adolfo					
		Sausa Aamir Farooa					
10.00 - 11.00	Boom: 49-200	buasa, Hanni Farooq					
10:00 - 11:00	Room: 49-200 Plenary 7: Prof Oren Petel . A	dvances in experimental methodo	logies to investigate blast and imp	pact trauma			
10:00 - 11:00	Room: 49-200 Plenary 7: Prof Oren Petel , A Chair: Prof Martin Brouilette	dvances in experimental methodo	logies to investigate blast and imp	pact trauma			
10:00 - 11:00 11:00 - 11:30	Room: 49-200 Plenary 7: Prof Oren Petel , A Chair: <i>Prof Martin Brouilette</i> Coffee Break	dvances in experimental methodo	logies to investigate blast and imp	bact trauma			
10:00 - 11:00 11:00 - 11:30 11:30 - 12:30	Room: 49-200 Plenary 7: Prof Oren Petel , A Chair: Prof Martin Brouilette Coffee Break Room: 49-200	dvances in experimental methodo	logies to investigate blast and imp	act trauma			
10:00 - 11:00 11:00 - 11:30 11:30 - 12:30	Room: 49-200 Plenary 7: Prof Oren Petel, A Chair: Prof Martin Brouilette Coffee Break Room: 49-200 Plenary 8: Prof Vincent Whe Christ: Part freak to	dvances in experimental methodo atley, Accelerator scramjet develo	logies to investigate blast and imp	bact trauma			
10:00 - 11:00 11:00 - 11:30 11:30 - 12:30	Room: 49-200 Plenary 7: Prof Oren Petel , A Chair: <i>Prof Martin Brouilette</i> Coffee Break Room: 49-200 Plenary 8: Prof Vincent Whe Chair: <i>Prof Frank Lu</i> Lunch	atley, Accelerator scramjet develo	logies to investigate blast and imp	bact trauma			
10:00 - 11:00 11:00 - 11:30 11:30 - 12:30 12:30 - 13:50 Fri 11 July 13:5	Room: 49-200 Plenary 7: Prof Oren Petel , A Chair: <i>Prof Martin Brouilette</i> Coffee Break Room: 49-200 Plenary 8: Prof Vincent Whe Chair: <i>Prof Frank Lu</i> Lunch 0 - 14:50	atley, Accelerator scramjet develo	logies to investigate blast and imp	bact trauma			
10:00 - 11:00 11:00 - 11:30 11:30 - 12:30 12:30 - 13:50 Fri 11 July 13:5	Room: 49-200 Plenary 7: Prof Oren Petel, A Chair: Prof Martín Brouilette Coffee Break Room: 49-200 Plenary 8: Prof Vincent Whe Chair: Prof Frank Lu Lunch 0 - 14:50 Room: 50-N201	dvances in experimental methodo atley, Accelerator scramjet develo Room: 50-N202	logies to investigate blast and impoment for access-to-space systems Room: 50-T103	Room: 50-T105	Room: 50-S201	Room: 50-C207	Room: 49-313A
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