

The Sharp Edge Flight Experiment SHEFEX 1 - A Mission Overview

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The KERAMIK Thermal Protection System Experiment on the FOTON-M2 Mission

Reimer, T.

Ablative Systems – Theory and Modelling

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New Methods for the Simulation of Ablative Thermal Protections

Nguyen-Bui, N. T. H.; Duffa, G.; Dubroca, B.; Leroy, B.

Interaction Between an Insulating Material and a Plasma. A Molecular Dynamics Simulation Approach.

Duffour, E.

Practical Navier-Stokes Computation of Flowfields with Ablation Products Injection

Bianchi, D.; Martelli, E.; Onofri, M.

Modelling and Computing Heat Transfer in Pyrolyzable Thermal Protection Systems

Charrier, P.; Dubroca, B.; Duffa, G.; Epherre, J. F.; Preux, C.

Roughness Evolution in Ablation of Carbon-Based Materials: Multi-Scale Modelling and Material Analysis

Vignoles, G. L.; Lachaud, J.; Aspa, Y.

On an Analytical Model of the Aerothermodynamics of Fluid-Structure Interaction

Campos, L.

TPS & Hot Structure Developments II and Application

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TPS Concept of the PARES Re-entry Capsule

Fischer, W.; Noeding, P.; Trabandt, U.; Voegt, S.; Walloschek, T.

Foldable Hot Structure Stabilizer for PARES

Trabandt, U.; Lücke, S.; Stecher, K.-H.; Boeljes, A., Fischer, W.

Status of Flap Development for Future Re-entry Vehicles (Pre-X)

Lange, H.; Steinacher, A.; Handrick, K.; Weiland, S.; Sygulla, D.; Guedron, S.; Salmon, T.

Technology status and developments of Metallic Hot Structures and Thermal Protection Systems

Mooij, E.; Offerman, J.

ULTIMATE: Metallic Thermal Protection System for Future RLV's - Status of the current Development

Fischer, W

ASA – Exploring Materials and Solutions for Hot Structures to be Implemented in Next-Generation Re-entry/Hypersonic Vehicles

Fossati, F.; D'Aversa, E.; Marino, G.; Marchetti, M.; Tului, M.

Design and Manufacturing of a Wing Hybrid Metal/Ceramic Hot Structure

Fossati, F.; Gambacciani, G.; De Palo, S.; Langlois, S.

Ablative Systems – Materials, Testing and Instrumentation

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Ablative Thermal Protections for Atmospheric Entry. An Overview of Past Missions and Needs for Future Programmes.

Bouilly, J.-M.; Dariol, L.; Leleu, F.

Sustainable C-Phenolic Ablative Material for the Ariane 5 SR Application to TPS for Entry Probes

Lacoste, M.; Barreteau, R.; Broquère, B.

Current Developments in Sensors for Thermal Protection Systems

Martinez, E.; Oishi, T.

High Heat Flux Measurements Using a Non-Stationary Device

Löhle, S.; Bourserau, F.; Lasserre, J. P.

CEA/CESTA and EADS ST Common Approach of Particles Impact Effect on Ablative Material Application to Mars Reentries

Sauvage, N.; Tran, P.; Montois, I., Pirotais, D.

Proposal for In-Flight Research on Ablation - Radiation Coupling

Muylaert, J.; Ritter, H.

A Study of Spacecraft Structures Materials Thermal Properties Based on Inverse Problems Technique

Alifanov, O.M.; Antonenko, J.; Budnik, S.A.; Mikchailov, V.V.; Nenarokomov, A.V.; Ritter, H.; Santovincenzo, A.; Titov, D.M.; Ydin, V.M.

Advanced TPS Concepts

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The Boundary Layer Thermal Protection System: an Advanced Concept for Protecting Hot Structures During Re-entry

Monti, R.O.; Savino, R.; Paterna, D.; de Stefano Fumo, M.

Film Cooling for Hypersonic Flow Conditions

Heufer, K.A.; Olivier, H.

Experimental Investigations of Transpiration Cooled CMC's in Supersonic Plasma Flows

Kuhn, M.; Hald, H.; Gülhan, A.; Esser, B.; Olivier, H.

Smart Thermal Protection Leading Edges

Keller, K.; Lampani, L.; Ritter, H.; Pfeiffer, E.; Gaudenzi, P.

Safety Improvements in TPS Development

Keller, K.; Pfeiffer, E.; Ullmann, T.; Ritter, H.

EXPERT

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Design of the EXPERT Re-entry Vehicle Metallic Thermal Protection System

Kester, G.J.A.N.; Birjmohan, S.R.

Metallic Thermal Protection System for the EXPERT Re-entry Vehicle: Modelling and Analysis
Fatemi, J.

Thermal and Mechanical Design of the EXPERT C/C-SiC Nose
Reimer, T.; Laux, T.

Status of CMC Open Flap Development for EXPERT
Lange, H.; Steinacher, A.; Handrick, K.; Weiland, S.

Catalysis of candidate TPS Materials for EXPERT – a Basis for TPS Design and Catalysis based in-flight Instrumentations
Herdrich, G.; Auweter-Kurtz, M.; Fertig, M.; Fischer, W.; Muylaert, J.-M.; Pidan, S.; Schüssler, M.; Trabandt, U.

High Temperature Insulation

Chair: H. Ritter

Heat Transfer in High-Temperature Multilayer Insulation
Daryabeigi, K.; Miller, S.; Cunnington, G.

Advanced High Temperature Insulations
Keller, K.; Pfeiffer, E.; Handrick, K.; Weiland, S.; Ullmann, T.; Ritter, H.

Improvement of Flexible External Insulation concerning Re-Usability
Antonenko, J.; Rieck, U.; Ritter, H.

Advanced Materials Development

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Ultra High Temperature Ceramics: Microstructure Control and Properties Improvement Related to Materials Design and Processing Procedures
Bellosi, A.; Monteverde, F.

An Investigation upon the Catalytic and Radiative Behaviours of ZrB₂-SiC Ultra High Temperature Ceramic Composites
Scatteia, L.; Cosentino, S.; Cantoni, S.; Balat-Pichelin, M.; Beche, E.; Sans, J.L.

Novel Thermal Protection Systems Via CTE-Matched CMC-OPS Tailoring, Employing the Fast-Sol-Gel-Produced Ceramic Matrices and Coatings
Haruvy, Y.; Huertas Olivares, I.; Liedtke, V.

Interlaminar Properties of 2D and 3D C/C Composites Obtained via Rapid-CVI for Propulsion Systems
Knoche, R.; Koch, D.; Tushtev, K.; Horvath, J.; Grathwohl, G.; Schmidt, S.; Beyer, S.

Testing, Instrumentation & Verification

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Test Facilities for High Enthalpy Planetary Entry Simulation
Herdrich, G.; Auweter-Kurtz, M.; Böhrk, H.; Fertig, M.; Löhle, S.

Aerothermal Qualification of High Temperature Materials and Structures in Ground Facilities
Gülhan, A.; Esser, B.; Koch, R.; Henckels, A.; Gruhn, P.

Radiative Transfer in PRE-X Flowfield

Frayssinet, O.; Puigt, G.; Couzi, J.; Tran, P.

Thermal Fluid-Structure Interaction in Different Atmospheres

Esser, B.; Gülhan, A.

Improvements on Catalycity Determination by Numerical and Experimental Crossing

van Ootegem, B.; Conte, D.; Tran, Ph.; Vervisch, P.; Regnier, Ph.; Crespos, C.; Larregaray, P.; Rayez, J. C.; Martin, L.

Characterization of Candidate Materials for the Catalytic Re-entry Experiment PHLUX on EXPERT

Schüßler, M.; Auweter-Kurtz, M.; Herdrich, G.; Pidan, S.

Role of Surface Impurities in Alumina Samples on the Recombination of Oxygen Atoms at High Temperature

Balat-Pichelin, M.; Bedra, L.; Gerasimova, O.; Badie, J.M.

Fiber Optic Health Monitoring System for Aerospace Hot Structures

Latini, V.; Striano, V.; Venditti, F.; Rendina, I.