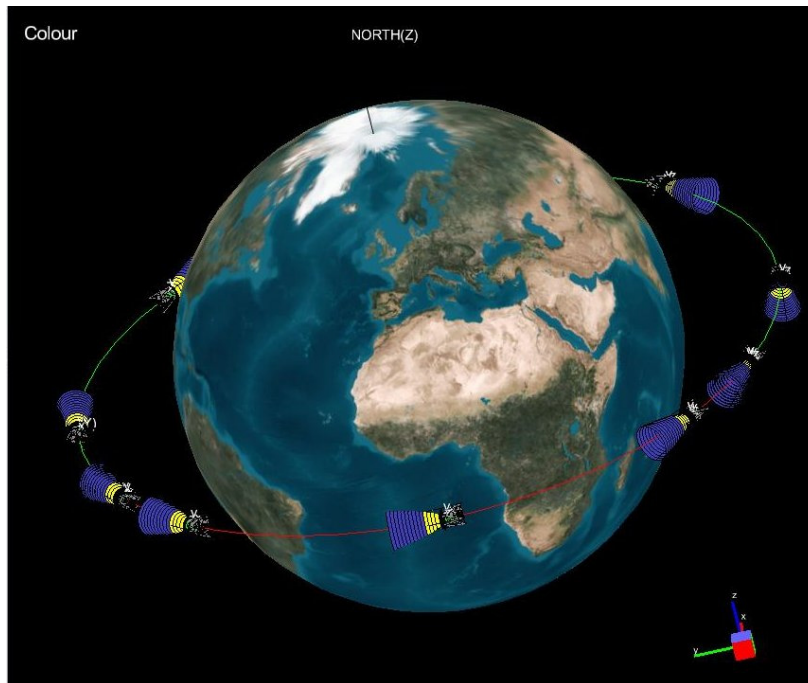


Proceedings of the
**29th European
Space Thermal Analysis
Workshop**

ESA/ESTEC, Noordwijk, The Netherlands

3–4 November 2015



courtesy: ITP Engines U.K. Ltd.

Abstract

This document contains the presentations of the 29th European Space Thermal Analysis Workshop held at ESA/ESTEC, Noordwijk, The Netherlands on 3–4 November 2015. The final schedule for the Workshop can be found after the table of contents. The list of participants appears as the final appendix. The other appendices consist of copies of the viewgraphs used in each presentation and any related documents.

Proceedings of previous workshops can be found at http://www.esa.int/TEC/Thermal_control under ‘Workshops’.

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⇒ Please note that text like [this](#) are clickable hyperlinks in the document.

⇒ This document contains video material. By (double) clicking on picture of a video the movie file is copied to disk and then played with an external viewer. This has been tested with Adobe Reader 9 in Windows and Linux using vlc as external viewer. Other pdf readers may not work automatically. As a last resort the user can manually extract the movie attachment from the file and play it separately.

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Programme Day 1

- 9:00 Registration
- 9:45 **Welcome and introduction**
Harrie Rooijackers (ESA/ESTEC, The Netherlands)
- 10:00 **OrbEnv — A tool for Albedo/Earth Infra-Red environment parameter determination**
Alex Green (University College London, United Kingdom)
Romain Peyrou-Lauga (ESA-ESTEC, The Netherlands)
- 10:25 **Mercury Retro-Reflection — Modelling and Effects on MPO Solar Array**
Anja Frey & Giulio Tonello (ESA/ESTEC, The Netherlands)
- 10:50 **On the thermal design and modelling of calibration blackbodies for the FCI and IRS instruments on MTG**
Nicole Melzack (RAL Space, United Kingdom)
- 11:15 Coffee break in the Foyer
- 11:45 **Development of methodologies for Brightness Temperature evaluation for the MetOp-SG MWI radiometer**
Alberto Franzoso (CGS, Italy)
Sylvain Vey (ESA/ESTEC, The Netherlands)
- 12:10 **MASCOT thermal design — how to deal with late and critical changes**
Luca Celotti & Małgorzata Solyga (Active Space Technologies GmbH, Germany)
Volodymyr Baturkin & Kaname Sasaki & Christian Ziach (DLR, Germany)
- 12:35 **Solar Orbiter SPICE — Thermal Design, Analysis and Testing**
Samuel Tustain (RAL Space, United Kingdom)
- 13:00 Lunch in the ESTEC Restaurant
- 14:00 **Spatial Temperature Extrapolation Case Study — Gaia in-flight**
Matthew Vaughan (ESA/ESTEC, The Netherlands, Airbus Defence and Space, France)
- 14:25 **Accelerating ESATAN-TMS Thermal Convergence for Strongly Coupled Problems**
Christian Wendt & Sébastien Girard (Airbus Defence and Space, Germany)
- 14:50 **OHB System — Thermal Result Viewer**
Markus Czupalla & S. Rockstein & C. Scharl & M. Matz (OHB System, Germany)
- 15:15 **Overview of ECSS Activities for Space Thermal Analysis**
James Etechells (ESA/ESTEC, The Netherlands)
- 15:45 Coffee break in the Foyer
- 16:15 **Improve thermal analysis process with Systema V4 and Python**
Alexandre Darrau (Airbus Defence and Space, France)
- 16:40 **Finite element model reduction for spacecraft thermal analysis**
Lionel Jacques & Luc Masset & Gaetan Kerschen
(Space Structures and Systems Laboratory, University of Liège, Belgium)
- 17:05 **The Thermal Design of the KONTUR-2 Force Feedback Joystick**
Ralph Bayer (DLR, Germany)
- 17:30 Social Gathering in the Foyer
- 19:30 Dinner in *La Galleria*

Programme Day 2

- 9:15 **ESATAN Thermal Modelling Suite — Product Developments and Demonstration**
Chris Kirtley & Nicolas Bures (ITP Engines UK Ltd, United Kingdom)
- 10:00 **SYSTEMA — THERMICA**
Timothée Soriano & Rose Nerriere (Airbus Defense and Space SAS, France)
- 10:45 **Thermal Spacecraft Simulator Based on TMM Nodal Model — Return of Experience**
Sandrine Leroy & François Brunetti (DOREA, France)
- 11:10 Coffee break in the Foyer
- 11:40 **Correlation of two thermal models**
Marije Bakker & Roel van Benthem (NLR, The Netherlands)
- 12:05 **Experience of Co-simulation for Space Thermal Analysis**
François Brunetti (DOREA, France)
- 12:30 **GENETIK+ — Introducing genetic algorithm into thermal control development process**
Guillaume Mas (CNES, France)
- 12:55 Closure
- 13:00 Lunch in the ESTEC Restaurant
- 14:00 Lab visits
- 15:30