

Methods to Improve Thermal Test Efficiency (MITTE)

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Thermal testing is part of the verification process needed on a space system. This task is time consuming and thus expensive due to both the thermal inertia and the complexity of a system level verification in an environment representative of the flight mission worst cases (vacuum and temperature). These constraints require efficient methodologies and associated tools covering the whole process:

- Test preparation, especially instrumentation or test sequence definition;
- Test execution, especially test monitoring and real-time test shortening;
- Test exploitation, especially model correlation.

The presentation will focus on the last developments involving the temporal and spatial extrapolations, the Infrared camera usage and the natural convection modelling in an industrial context. The activity has been deployed in two space projects to prove its feasibility. The use of Infrared data measurements has been exploited to extrapolate the temperature field based on the thermal model information.

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