

# **METTI5 Tutorial T9 on**

## **“Thermal characterization of an insulating material through a tri-layer transient method”**

### **Authors**

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### **Duration**

1 h 30

### **Type**

Experimental

### **Content**

The three layers transient method is dedicated to the thermal properties measurement of small samples of insulating materials. The three layers experimental device (brass/sample/brass) and the principle of the measurement based on a pulsed method will be first presented. The three dimensional model of the system will be developed and used for a sensitivity analysis. The estimation method will be described and its application to simulated noisy measurements realized with COMSOL will be presented. During the workshop, several experiments will be carried out on different materials and the experimental temperature recording will be used to estimate the thermal properties of the tested samples.

Some improvements to the initial model such as taking into account a parallel or series thermal resistance will be discussed.