

4 Oral presentation preparation and notice

Each group will be composed of 3 students, with at list someone able to code in python efficiently. Each group will gather students in ITED or INAES only. The expected works are the following :

1. read the given publication on SAVOIR
2. choose 3 materials related to building (ITED) or high temperature shilding for aeronautics (INAES)¹.
3. source the use of the material in scientific publications.
4. write the thermal model and boudary conditions (impedance and quadrupole)
5. test several combination of materials to decide which one is the best
6. make a summary of the comparative study and prepapre an oral presentation.

For ITED group, the objective of the study is the following :

- get a constant solar heat flux during 6h.
- model the internal temperature of a rectangular room of 50 m².
- find a material configuration where the internal room temperature is the lowest.

For INAES group, the objective of the study is the following :

- get a constant heat flux of 15 MW/m²
- model the rear face temperature
- find the duration of the atmospheric entry before the rear temperature exceed 400 °C.

The oral presentation will have the following outline

1. Introduction
 - Presentation of the context and geometry
 - choise of the material (source to literature, motivations,...)
2. Methods
 - Presentation of explanation of the impedance model
 - Presentation of explanation of the quadrupole model
3. Results
4. Conclusions

The expected time for the presentation is 10' plus 5' of questions. Do not exceed 10 slides of presenation. Each participant needs to talk/present the results.

1. Make sure that each group has different materials combination