

Post Doctoral Position:

Modelling, simulation and analysis of ice shedding mechanisms

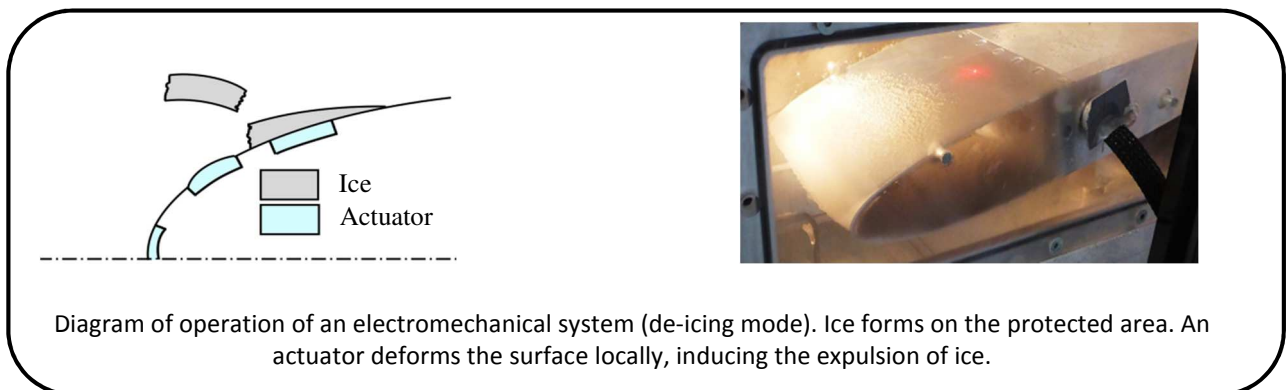
Technical or scientific fields: computational mechanics, fracture theory, modal analysis.

Short description:

In the context of more electric aircraft and more stringent rules and regulations, aircraft manufacturers are moving towards electrothermal and electromechanical ice protection systems (assisted by icephobic/hydrophobic coatings). These systems operate in complex environments involving many different and coupled physical phenomena. The key mechanisms at play during the operating of such systems are to this day not well understood. In particular, there is a strong need to better understand the mechanisms by which ice is fractured and shed by the action of a system. The post-doc will focus on the modelling and study of such fracture mechanisms by means of numerical simulation (in-house codes at ONERA) and modal analysis (techniques developed at ICA). The goal of this post-doctoral research is to identify efficient excitation vibratory modes. The results will enable a better vision of potential improvements and the proposition of design criteria for electrothermal and electromechanical ice protection systems.

The post-doctoral researcher should have strong skills in analytical and computational methods applied to mechanics. A background in fracture mechanics would be appreciated.

The post-doctoral position is funded by an RTRA collaborative project involving ONERA Toulouse, ISAE, ICA and IMFT.



Localization:

2 possible nearby localizations depending on project needs

ONERA – Office National d'Etudes et de Recherches Aérospatiales
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Period and salary:

18 months (starting around March 2018). 2200 or 2500 € per month (depending on postdoctoral experience).