PhD Scholarship in Acoustics

Laboratoire d'Acoustique de l'Université du Maine (LAUM)
Le Mans, France

Applications are invited for a 3-year PhD studentship to work on acoustic treatments for aircraft engines. The high-speed flows found in the intake, frame and bypass duct of an aircraft engine have a significant influence on the acoustic treatments. In particular the boundary layer of the flow can drastically change the performance of these liners. The overall aim of this PhD project is to develop a better understanding of the interactions between the sound waves, the liner and the boundary layer and to improve prediction methods for liner attenuation with flow. A number of models will be developed and used to predict the effects of the boundary layer and to gain more insight into the underlying physics. Comparisons with experimental data will also be conducted to validate the predictions.

Context: Noise emission remains one the main challenges for the development of commercial aviation. For the next generation of aircraft engines to be quieter and more fuel efficient, the performance of acoustics absorbers installed on these engines must be optimised. This PhD project is part of the research programme MACIA that aims to explore and develop novel acoustic treatments specifically for applications in aeronautics. Funded by the ANR, this is a partnership between the Laboratoire d'Acoustique de l'Université du Maine (LAUM) in Le Mans, France and the SAFRAN Group, which is a world-leading manufacturer of aircraft engines.

The student will be based mainly at the LAUM and will be supervised by Gwénaël Gabard and Yves Aurégan. The project will involve collaboration with engineers from the SAFRAN Group as well as participation in national and international scientific conferences. The LAUM is one of the largest research labs in acoustics and hosts a large number of researchers and projects working on acoustic treatments, including several specialised experimental facilities.

Profile: Applicants should have a Masters degree (or equivalent qualification) in acoustics or fluid mechanics. A keen interest for computational modelling is required. Previous experience with Computational Fluid Dynamics tools would be beneficial, but is not mandatory. We look for highly motivated applicants with excellent interpersonal, written and oral communication skills.

Funding: CIFRE scholarship from the SAFRAN Group.

Duration: 3 years.

Expected start date: September 2017.

Further enquiries: Please contact Gwénaël Gabard (gwenael.gabard@univ-lemans.fr, +33 (0)2 4383 3553).