

Position for Marie-Curie postdoc at Linz, Austria

EXAMPLE - Exact and Adaptive Modeling and Simulation of the Air Passage of Aircraft Engines



The Institute of Applied Geometry at Johannes Kepler University (Linz, Austria) has openings for three 1-year postdoc positions (experienced researcher 4-10 years experience) under an EU Marie-Curie Initial Training Network (Call: FP7-PEOPLE-2012-IAPP) on "Exact and Adaptive Modeling and Simulation of the Air Passage of Aircraft Engines" (EXAMPLE).

The interaction between the processes of design and analysis of mechanical components is at the core of industrial engineering. In particular in the very specialized and competitive field of designing highly efficient aircraft engines, a large number optimization loops is required to fully exploit the entire potential of efficiency with respect to various mechanical, aerodynamic and thermal objectives. On the one hand, the design process is performed with the help of suitable software tools, which represent the field of Computer Aided Design (CAD). In aircraft engine design, a combination of commercial products with highly specialized in-house software tools is used. On the other hand, the analysis process relies on software from the field of Computer Aided Engineering (CAE). The interaction of these tools, which is needed for optimizing the engineering design with respect to various criteria, is not very well supported by the currently used mathematical technology for geometric design and numerical simulation. The main objective of the EXAMPLE project is as follows:

Improve the design and analysis processes for the air passage of aircraft engines by enhancing the existing mathematical technology using the new approach of Isogeometric Analysis (IGA) which was proposed T.J.R Hughes et al. in 2005.

This objective will be achieved by combining expertise of the academic partner on IGA, with the experience on design and analysis of aircraft engines which is available at the industrial partner. The two main work packages in EXAMPLE will address the following two topics:

- (1) Volumetric Air Passage Modeling and Applications, in particular techniques for creating Spline Volume Parameterizations of the Air Passage.
- (2) Adaptive Trivariate Spline Technology

The suitable candidates for the postdoc positions will have a PhD degree in Mathematics, Engineering, Computer Science, or a closely related subject. The candidates are expected to possess a strong background in isogeometric analysis.

Yearly reference rate: Experienced Researchers (€ 58.500,- * 1,062 fulltime including all employer's duties) and mobility allowance depending on family status.

http://ec.europa.eu/research/participants/portal/page/call_FP7?callIdentifier=FP7-PEOPLE-2012-IAPP&specificProgram=PEOPLE#wlp_call_FP7

Eligibility requirements to the Marie-Curie ITN scheme include that the candidates have not spent more than 12 months in Austria in the 3 years immediately preceding the appointment for this position. For further details on eligibility see Work Programm 2011-People

ftp://ftp.cordis.europa.eu/pub/fp7/docs/fp7-mga-annex3intramulti_en.pdf

Please send your application (a letter describing your motivation to apply for this post, CV, names of two referees) to

bert.juettler@jku.at

For information on the Marie-Curie program, check:

<http://ec.europa.eu/research/mariecurieactions/>



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