Premio José Luis Rubio de Francia para jóvenes investigadores e investigadoras en Matemáticas

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Jury Report

Dr. Alberto Enciso was born in 1980. He studied both mathematics and physics at the Universidad Complutense de Madrid. This training provided him with a deep intuition in mathematical physics. He obtained his Ph.D. in 2007 under the guidance of Dr. A. González-López and Dr. M. A. Rodríguez. The range of Dr. Enciso's interests as much as the deepness and the relevance of his contributions are truly amazing.

Dr. Enciso has done an impressive research work, with several co-authors in different areas related to mathematical physics, partial differential equations and differential geometry and he has achieved a very important international visibility.

He has demonstrated outstanding creativity and versatility within his papers, not only proving hard and important results but also producing novel, reusable techniques along the way.

Among other achievements, the jury wants to highlight his recent paper, joint with D. Peralta-Salas, in Annals of Mathematics, where Moffatt's conjecture is solved. This conjecture describes the topological complexity of the stream lines of steady solutions of Euler equations. It is really a deep problem in fluid dynamics which resisted attacks by V. Arnold. In his solution of Moffatt's conjecture and in other contributions Dr. Enciso introduced completely new methods in mathematical physics. He uses a wide range of techniques: combinatorial topology, stability of maps, analysis and non-linear PDEs. These new ideas have far reaching applications in non-linear PDE's.

Besides this work, the candidate has also remarkable results in geometric analysis and mathematical physics. He has published around 40 papers, some of them in others high-profile journals such as Communications in Mathematical Physics, and Transactions of the AMS.

It is the unanimous opinion of the jury that he is without hesitation an excellent candidate for the Rubio de Francia's prize.