Geophysical Research Abstracts,
Vol. 11, EGU2009-13485, 2009
EGU General Assembly 2009


# Education and research in fluid dynamics

P. López González-Nieto (1), J.M. Redondo (2), and J.L. Cano (3)

(1) Fac. de Ciencias Biologicas. Univ. Complutense de Madrid, Spain. (maplopez@bio.ucm.es), (2) Departament de Fisica Aplicada Univ. Politécnica de Catalunya, Barcelona, Spain (redondo@fa.upc.es), (3) Fac. de Ciencias Físicas. Univ. Complutense de Madrid, Spain

Fluid dynamics constitutes an essential subject for engineering, since auronautic engineers (airship flights in PBL, flight processes), industrial engineers (fluid transportation), naval engineers (ship/vessel building) up to agricultural engineers (influence of the weather conditions on crops/farming).
All the above-mentioned examples possess a high social and economic impact on mankind. Therefore, the fluid dynamics education of engineers is very important, and, at the same time, this subject gives us an interesting methodology based on a cycle relation among theory, experiments and numerical simulation.
The study of turbulent plumes –a very important convective flow- is a good example because their theoretical governing equations are simple; it is possible to make experimental plumes in an aesy way and to carry out the corresponding numerical simulatons to verify experimental and theoretical results. Moreover, it is possible to get all these aims in the educational system (engineering schools or institutions) using a basic laboratory and the "Modellus" software.