Geophysical Research Abstracts, Vol. 9, 11754, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-11754

Direct Numerical Simulations of fine structure and mixing in a continuously stratified flow

H. Houcine (1), A. Gharbi (1), T. Lili (1), P. Fraunié (2), Y. Chashechkin (3)

(1) Laboratoire de Mécanique des Fluides, Faculté des Sciences de Tunis, Université El Manar, (2) Laboratoire de Sondages Electromagnétiques de l'Environnement Terrestre,UPRESA 6017 CNRS, Université de Toulon et du Var, BP 132, 83957 La Garde Cedex, France (fraunie@lseet.univ-tln.fr), (3) Institute for problems in mechanics of the RAS, Moscow

High order numerical simulations of low Reynolds wake and internal waves induced by a towing vertical strip in stratified flow at rest are performed in self similarity to previous experiments. The pattern of flow fully agrees with Schlieren visualisation when quantitative velocity and density distributions are carefully investigated from computations depending on Froude number. Especially, transient and distorted internal wave behavior is investigated from a set of chosen cases. Moreover, test numerical experiments when a large scale internal wave forcing is imposed instead of an array of obstacles are pesented.

Acknowledgements:
This research was supported by a Région PACA grant for international exchanges and an invited professor position in USTV for Prof Y. Chashechkin.