Abstract Submitted
for the DFD11 Meeting of
The American Physical Society

The whale footprint ADRIEN BENUSIGLIO, CHRISTOPHE CLANET, LadHyx, Ecole Polytechnique — In their wake whales leave patches of very calm water, with few waves, that can last for several minutes known as whale footprints. The same phenomenon of damping of waves appears near pears of bridges, in the turbulent wake of ships or in rivers re-emergences, thus it appears to be the result of the interaction of a turbulent flow with surface waves. To understand this phenomenon we study the interaction of a single vortex ring with surface waves. We investigate the influence of the size and circulation of the vortex ring. We measure the time of interaction and the size of the resulting patch of calm water. We then verify if our model can explain the whale footprint.

Adrien Benusiglio
LadHyX, Ecole Polytechnique

Date submitted: 05 Aug 2011 Electronic form version 1.4