Abstract Submitted
for the DFD15 Meeting of
The American Physical Society

Drag reduction by reconfiguration in gorgonians JULIEN DERR, ANNEMIEK J. M. CORNELISSEN, Université Paris Diderot, CLAUDE BOUCHON, YOLANDE BOUCHON, Université des Antilles et de la Guyane, JÉRÔME FOURNIER, CNRS/MNHN, LIONEL MOISAN, Université Paris Descartes, PASCAL JEAN LOPEZ, CNRS/MNHN, STÉPHANE DOUADY, Université Paris Diderot — Gorgonians are polyp colonies over a flexible branched skeleton. Attached to the coral reefs, they are under the continuous oscillations of the swell. We investigate experimentally the drag, under continuous force traction, of *Gorgonia Ventalina*, which is particular as its branches are highly reconnected to form a flat net (see fan), perpendicular to the swell, and compare it with another branched species (candelstick). We observe a drag which is linear with speed, indicating a strong reconfiguration, which we also documented by imaging the gorgon shape, and transients showing that the gorgon do not always evolve along quasi-static curves. Depending on the size and shape of the gorgon, we observe different details, from a more rigid small gorgon to a flexible long one. A large gorgon with detached fingers, closing on themselves under the current, presents characteristics surprisingly close to a rigid candlestick one, with not much reconfiguration.

Michael Berhanu
Université Paris Diderot

Date submitted: 31 Jul 2015 Electronic form version 1.4