

Abstract Submitted
for the DFD10 Meeting of
The American Physical Society

LES of turbulent stratified flows on shallow continental shelves
GUILLAUME MARTINAT, Old Dominion University, Norfolk, VA, ANDRES
TEJADA-MARTÍNEZ, University of South Florida, Tampa, FL, CHESTER
GROSCH, Old Dominion University, Norfolk VA, CENTER FOR COASTAL
PHYSICAL OCEANOGRAPHY, OLD DOMINION UNIVERSITY, NORFOLK
VA TEAM, DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING,
UNIVERSITY OF SOUTH FLORIDA, TAMPA, FL TEAM — Turbulent shear
flow on shallow continental shelves (here shallow means that the interaction with
the solid, no slip bottom is important) are of great importance because tides and
wind driven flow on the shelf are drivers of the transfer of momentum, heat, and
mass (gas) across the air-sea interface. We use Large Eddy simulation to study and
quantify the impact of a stable stratification on the dynamic of shear driven and
pressure gradient driven turbulent flows. These computations are compared to the
corresponding unstratified flows to provide a better understanding of the physics
governing the interaction between stratification and turbulent flows.

Chester Grosch
Old Dominion University

Date submitted: 10 Aug 2010

Electronic form version 1.4