1041-76-43   **Razvan C Fetecau*** (`van@math.sfu.ca`), Dept. of Mathematics, Simon Fraser University, 8888 University Dr., Burnaby, BC V5A 1S6, Canada, and **David J Muraki**, Dept. of Mathematics, Simon Fraser University, 8888 University Dr., Burnaby, BC V5A 1S6, Canada. *Dispersive Corrections to a Modulation Theory for Stratified Gravity Waves.*

We consider an internal wavepacket propagating through a stratified fluid, resulting into a wave-induced mean flow, as observed for instance in the wind reversing phenomenon in stratosphere, called the quasi-biennial oscillation (QBO). We derive a high order modulation theory for the linear and nonlinear Boussinesq equations. At leading order the modulation equations consist of a system of conservation laws that may exibit wave breaking, as well as ellipticity breakdown (or ill-posedness due to loss of hyperbolicity of the system). We show that the higher order correction terms fix the wave breaking, as well as the ellipticity breakdown.

This is joint work with D. Muraki. (Received July 24, 2008)