

Characterization and evolution of thermohaline intrusions in Cape Verde Frontal Zone

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Thermohaline intrusions have vertical scales of 10–100m and horizontal scales of 1–100 km. During November 2017 was carried out a multidisciplinary survey FLUXES II (FLUXES project) in the Cape Verde Frontal Zone (CVFZ). Temperature-Salinity and microstructure data from observations in high spatial resolution (SeaSoar) along several sections provide an excellent opportunity to study these intrusions and interleaved features across this thermohaline front.

Interleaving motions are thought to be driven by buoyancy forces arising from differential mixing of heat and salt by double diffusion. With the assumption of a steady-state stage of interleaving, the slope of intrusions relative to isopycnal surfaces was studied, finding cases where salt-finger density fluxes exceed those of diffusive convection and vice versa. Also, we explore the effect of vertical shear on the double diffusion processes analyzing the role of baroclinicity in driving intrusive motions.

Acknowledgments: This work has been supported by the Spanish government (Ministerio de Economía y Competitividad) through project FLUXES (CTM2015-69392- C3-3- R).