Geophysical Research Abstracts
Vol. 12, EGU2010-131, 2010
EGU General Assembly 2010


# Nambu brackets in fluid dynamics and magnetohydrodynamics

Roberto Salazar (1) and Michael Kurgansky (2,3)

(1) University of Concepcion, Department of Physics, Center for Quantum Optics and Quantum Information, Concepcion, Chile (robertobenjsala@udec.cl), (2) University of Concepcion, Department of Geophysics, Concepcion, Chile, (3) A.M. Obukhov Institute of Atmospheric Physics, Russian Academy of Sciences, Moscow, Russia

Concrete examples are given of construction of Nambu brackets for equations of motion (both 3D and 2D) of Boussinesq stratified fluids and also for magnetohydrodynamical equations. Two alternative formulations are proposed, first by using fluid dynamical (kinetic) helicity and/or enstrophy as constitutive elements of Nambu brackets and, second, by using the existing conservation laws of the governing equation for Nambu brackets construction.