Numerical studies in shallow moist convection

Prof. Dr. rer. nat. Jörg Schumacher

TU Ilmenau, Fakultät für Maschinenbau
Fachgebiet Theoretische Strömungsmechanik
joerg.schumacher@tu-illmenau.de

Abstract

Convective turbulence with phase changes and latent release is an important dynamical process in the atmosphere of the Earth which causes, e.g., the formation of clouds. Here we study moist convection in simplified setting - shallow and nonprecipitating moist Rayleigh-Benard convection with a piecewise linear thermodynamics on both sides of the phase boundary. The presented model is a first nontrivial extension of the classical dry Rayleigh-Benard convection. The equations of motion and the fully developed turbulent dynamics in very flat Cartesian cells are discussed.

Zeit und Ort

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Kontakt

Prof. Dr.-Ing. Jochen Fröhlich
Tel: 0351-46337607
E-Mail: jochen.froehlich@tu-dresden.de