

Special CEA FM Seminar: Spring 2016



JOHNS HOPKINS Center for Environmental & Applied Fluid Mechanics

Date: **Tuesday, March 15, 2016 (Special Date)**
Time: 4:00 p.m. **(Special Time)**
Location: Gilman Hall # 50
Speaker: **Prof. Detlef Lohse** (University of Twente)
Title: ***"Double Diffusion and Rayleigh-Benard Convection"***

Abstract

In the talk I will discuss double diffusive convection in the fingering regime, which is the relevant regime for double diffusion in the tropical ocean, with a destabilizing salt concentration field and a stabilizing temperature field. I will focus on the flow structure and on scaling laws of the transport quantities, the Reynolds number, and boundary layer and finger thicknesses. We will show that the unifying scaling theory developed for Rayleigh-Benard convection can predict the salinity flux and the Reynolds number in some regimes of double diffusive convection, too, without introducing any new parameters.

This is joint work with Yantao Yang (Twente) and Roberto Verzicco (Twente and Rome).

Bio

Professor Lohse is one of the most well-known fluid mechanics of our time with a wide variety of interests from the dynamics of drops and bubbles to turbulence, Rayleigh-Benard convection, rotating flows and others. He received his Ph.D. on the theory of turbulence in Marburg/Germany in 1992. As a postdoc in Chicago, and later in Marburg and Muenchen, he worked on single bubble sonoluminescence. In 1998, he was appointed as Chair of Physics of Fluids at the University of Twente, in the Netherlands, where he still is. He is Fellow of the American Physical Society, Division of Fluid Dynamics, and of IoP. He is also elected Member of the German Academy of Science (Leopoldina) and the Royal Dutch Academy of Science (KNAW). He received various prizes such as the Spinoza Prize (2005), the Simon Stevin Prize (2009), the Physica Prize (2011), the George K. Batchelor Prize for Fluid Dynamics (2012), and the AkzoNobel Prize (2012).