

Abstract Submitted  
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**The Göttingen rotating turbulent Rayleigh–Bénard convection facility**<sup>1</sup> EBERHARD BODENSCHATZ, MPI for Dynamics and Self-Organization, Goettingen, DENNIS VAN GILS, Max Planck Institute for Dynamics and Self-Organization, Goettingen; Physics of Fluids, University of Twente, Enschede, XIAOZHOU HE, MPI for Dynamics and Self-Organization, Goettingen, GUENTER AHLERS, MPI for Dynamics and Self-Organization, Goettingen; Department of Physics, University of California, Santa Barbara, INTERNATIONAL COLLABORATION FOR TURBULENCE RESEARCH, EUHIT COLLABORATION — This presentation will focus on the newly commissioned rotating RBC facility at the Max Planck Institute for Dynamics and Self-Organization (MPIDS). The MPIDS has a pressure vessel, called the Uboot of Göttingen, which can house different RBC cells. By pressurizing the Uboot with sulfur hexafluoride, nitrogen, or helium up to 19 bars one can obtain Rayleigh numbers spanning  $10^9 < Ra < 10^{15}$ , at nearly constant Prandtl numbers. Recently, a rotating table was constructed that can operate outside as well as in the Uboot, on top of which the current RBC cell of aspect ratio 0.50 can be installed. The accessible parameter space is  $0.02 < Ro^{-1} < 20$  for the inverse Rossby number and  $10^{-8} < Ek < 10^{-3}$  for the Ekman number. At strong rotation (small Ek) but still turbulently convective (large Ra) one enters the geostrophic turbulent regime. Recent experiments involve measuring in and near this regime of which preliminary results will be shown and discussed.

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