

Abstract Submitted  
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**Experimental Quantification of Inverse Energy Cascade in Deep Rotating Fluid** EHUD YAROM, ERAN SHARON, The Hebrew University of Jerusalem — We present quantitative experimental measurements of an inverse energy cascade in deep rotating turbulence. Experiments were performed in a rotating cylindrical water tank configuration with energy injection at a large wavenumber,  $k_i$ . For  $k < k_i$  the steady state energy spectrum is very well described by  $E_k = C\varepsilon^{2/3}k^{-5/3}$ , the 2D energy spectrum. The temporal evolution of energy spectra towards steady states was measured. We identify a “front” which propagates from large to small wave numbers, behind which the spectrum attains its steady state value. The propagation of these fronts was measured for different energy injection rates and rotation frequencies. These measurements are in good quantitative agreement with the predictions for 2D turbulence.

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