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**Intermittency in two dimensional turbulence** YONGGUN JUN, JIE ZHANG, XIAO-LUN WU — Intermittency of the velocity difference  $\delta v_l$  and the energy dissipation rate  $\varepsilon_l$  on scale of  $l$  is investigated on the inverse energy cascade range in the forced 2D turbulent flow. Measurements are performed on the freely-suspended horizontal soap film using particle tracking velocimetry. We use the multifractal method to analyze the energy dissipation rate  $\varepsilon_l$  and calculate the scaling exponent  $\tau_q$  and the intermittency parameter  $\mu_\varepsilon$ . From high order structure function  $\langle(\delta v)^p\rangle \sim l^{\zeta_p}$ , We obtain the scaling exponent  $\zeta_p$  with integer  $p$  and estimate the intermittency parameter  $\mu_v$ . The Komogorov refined hypothesis suggests the relation  $\zeta_p = \tau_{p/3} + p/3$ . This relation agrees with the experimental data up to  $p = 5$ . The deviation for larger  $p$  may be due to linear damping in the system that also contributes to the energy flux on large scales.

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