Enhanced fractal dynamics of a BEC induced by dipolar interactions JESSICA TAYLOR, BOAZ ILAN, KEVIN MITCHELL, Univ of California - Merced — The escape dynamics of a Bose-Einstein condensate (BEC) from a potential well are studied computationally. Previous studies based on the Nonlinear Schrödinger / Gross-Pitaevskii (NLS-GP) equation have predicted the fractal nature of the escaping flux. In attractive BECs (focusing NLS), the wave packet can undergo collapse. The effects of dipolar interactions suppress this collapse while also mitigating the wave packet's dispersion, resulting in enhanced fractal dynamics. This is joint work with Boaz Ilan and Kevin Mitchell.

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