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Coherent vortex extraction in drift wave turbulence using orthogonal wavelets[1] MARIE FARGE, LMD–CNRS, Ecole Normale Supérieure, Paris, France, WOUTER BOS, LMFA - CNRS, Ecole Centrale de Lyon - Université de Lyon, Ecully, France, SHINPEI FUTATANI, SADRUDIN BENKADDA, PIIM–CNRS & Université de Provence, Marseille, France, KAI SCHNEIDER, M2P2–CNRS & CMI, Université de Provence, Marseille, France — A wavelet based technique for extracting coherent vortices, called coherent vortex extraction, is applied to simulations of drift wave turbulence. We show that the coherent vorticiy, represented by few degrees of freedom, is responsible for the dynamics and transport. The radial density flux is carried by these coherent vorticy modes. The quasi-hydrodynamic limit shows a local depletion of nonlinearity and can be quantitatively distinguished from the quasi-adiabatic case by the skewness of the probability distribution function of the Weiss-field.

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