

Abstract Submitted
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Turbulent transport in drift wave turbulence: the role of coherent vorticity¹ WOUTER BOS, MSNM-CNRS & CMI Université de Provence, France, SHINPEI FUTATANI, Graduate School of Energy Science, Kyoto University, Japan, KAI SCHNEIDER, MSNM-CNRS & CMI Université de Provence, France, MARIE FARGE, LMD-CNRS, Ecole Normale Supérieure, Paris, France, SADRUDDIN BENKADDA, PIIM-CNRS, Université de Provence, 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 vorticity, represented by few degrees of freedom, is responsible for the dynamics and transport. The radial density flux is carried by these coherent vorticity 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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