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Applications of continuous and orthogonal wavelet transforms to MHD and plasma turbulence¹ MARIE FARGE, LMD-IPSL-CNRS, Ecole Normale Supérieure, 24 rue Lhomond, 75231 Paris Cedex 05, France, KAI SCHNEIDER, I2M-CNRS, Centre de Mathématiques et d'Informatique, Aix-Marseille Université, Marseille, France — Wavelet analysis and compression tools are presented and different applications to study MHD and plasma turbulence are illustrated. We use the continuous and the orthogonal wavelet transform to develop several statistical diagnostics based on the wavelet coefficients. We show how to extract coherent structures out of fully developed turbulent flows using wavelet-based denoising and describe multiscale numerical simulation schemes using wavelets. Several examples for analyzing, compressing and computing one, two and three dimensional turbulent MHD or plasma flows are presented.

Details can be found in M. Farge and K. Schneider. Wavelet transforms and their applications to MHD and plasma turbulence: a review. *J. Plasma Phys.*, **81**(6), 435810602, 2015. arXiv:1508:05650

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