

Extraction of coherent bursts from turbulent edge plasma in the tokamak Tore Supra using orthogonal wavelets

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We present a new method to extract coherent structures out of turbulent flows in order to study their role for transport and mixing. It is based on the wavelet representation [1] associated to nonlinear filtering, as proposed in [2]. We apply it to a saturation current signal measured in the SOL of the tokamak Tore Supra. We thus perform an orthogonal decomposition into intermittent coherent bursts and non-intermittent incoherent background [3]. We conjecture that the bursts are responsible for transport while the background contributes to turbulent diffusion.

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