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## The Reduced Wavelet Scattering Transform, a comprehensive statistical description of the non-Gaussian structures in the ISM

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The ubiquitous filamentary patterns that are observed in the interstellarmedium (ISM) are the result of the interplay between turbulence, magnetic fields and gravity. These patterns are examples of the highly non-Gaussian structures that emerge naturally from non-linear physical processes. As our understanding of the magnetized ISM largely relies on the comparison of observations with numerical MHD simulations and phenomenological models we need an adequate statistical description of non-Gaussian, filamentary structures. Such a description would provide a way to quantify the impact of the physical parameters on the statistical properties of the emerging structures. In this talk, I will present the Reduced Wavelet Scattering Transform (RWST), a low variance statistical description of non-Gaussian physical processes. This description has been obtained through a reduction of the Wavelet Scattering Transform (WST) of Mallat et al., by fitting its angular dependencies under certain conditions of regularity thatcan be expected for ISM physics. I will show how such a fit applies successfully on different fields (fBm synthetic processes, column density maps from MHD simulations, and astrophysical observations of dust total intensity emission), and discuss the physical interpretation of the differentcomponents of the RWST.