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**Anisotropy and intermittency in the turbulent shearless mixing** MICHELE IOVIENO, DANIELA TORDELLA, DIASP, Politecnico di Torino — We focus on velocity and velocity derivative statistics in the decaying shearless turbulent mixing. The data are obtained by means of direct numerical simulations. The flow is generated by the interaction of two decaying isotropic turbulent flows of differing kinetic energies by equal macroscale. The Taylor microscale Reynolds number ranges from 45 to 150. Inside the mixing layer the velocity statistics depart from the quasi-Gaussian values observed in the homogeneous external regions, and show a high level of large scale intermittency. Anisotropy was found to be mild for the velocity second order moments but very intense on higher order velocity moments: the moments in the nonhomogenous direction are almost twice than those in the normal directions. Inside the mixing, longitudinal derivative third moments in the direction of the mixing present a minimum, while the moments along the normal directions present a maximum. A ratio 4 it is observed. For the kurtosis this ratio decreases to 1.24. The variation of the longitudinal derivative skewness across the mixing is of $\sim 0.8$, to be compared with a variation of 0.04 in the isotropic regions, a value which can be taken as a measure of the numerical accuracy.

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