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**The intense vorticity structures in isotropic turbulence with a “Carreau-Yasuda” fluid** AFONSO GHIRA, CARLOS SILVA, Instituto Superior Técnico/University of Lisbon — Direct numerical simulations of isotropic turbulence are carried out to assess the flow topology and the dynamics of the intense vorticity structures in a shear-thinning fluid. Specifically, the Carreau-Yasuda fluid model is used to describe the shear-thinning viscosity while the intense vorticity structures are tracked using a numerical algorithm. The eddy characteristics are compared to the ones observed in Newtonian turbulence and the effects of the shear-thinning are assessed in relation to the small scale dynamics of the flow.

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