

Abstract Submitted  
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**Helicity in isotropic turbulence** YEONTAEK CHOI, CHANGHOON LEE, Yonsei University — We are interested in helicity in isotropic turbulence in this study. Especially, intermittency and helicity are interesting objectives. We investigated helicity in isotropic turbulence with DNS, which the way to show is slightly different from the previous studies interested in joint spectrum of helicity with energy. First, we check the angles between velocity and vorticity of fluid particles, since the angles give contribution to alignment of velocity and vorticity. But we did not find evidences that the angles are related to intermittency of helicity by now. Second, we looked for coherent structures in isotropic turbulence, and compared to helicity. In this investigation, we verified through DNS that soliton-like structures are present in strong region of coherent structures and helicity. Third, we continued to observe relation between acceleration and helicity. Their similarities in statistics are easily deduced through analytic formula. But in this research, additionally, we employed multi-fractality and saddle point method to identify the relation.

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