

[Seminer] Spin Turbulence in Spinor Bose-Einstein Condensates

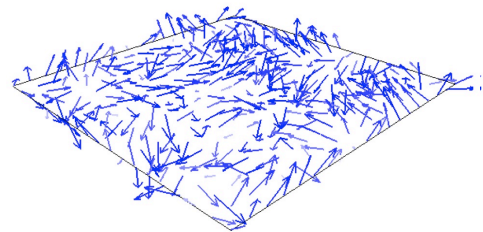
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I discuss spin turbulence (ST) in spinor Bose-Einstein condensates (BECs). When the system is excited from the ground state, appears ST where the spin density vectors are spatially disordered (See the figure) [1]. ST is characterized by the novel $-7/3$ power law in the spectrum of the spin-dependent interaction energy. The direction of the spin density vector is spatially disordered but temporally frozen in ST, showing some analogy with spin glass state [2]. When we introduce the order parameter of spin glass into ST, it grows with the appearance of the $-7/3$ power law. ST allows turbulence not only of spins but also of superfluids, the two kinds of turbulence sustaining each other through interaction [3].

References

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