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Spinor Bose-Einstein Condensates Under Synthetic Gauge Field[1] XIAO-QIANG XU, JUNG HOON HAN, Department of Physics and BK21 Physics Research Division, Sungkyunkwan University, Suwon 440-746, Korea — Due to the recent popularity of synthetic gauge field in ultracold atoms, I will talk about the combined effects of Rashba spin-orbit coupling (SOC) and rotation in spin -1/2 condensates [X.-Q. Xu et al, Phys. Rev. Lett. 107, 200401 (2011)]. Novel features appear in the ground state wave function, such as the existence of a half-quantum vortex or giant vortex, domains of stripe-like phase, suppressed Skyrmion order. Additionally, I will talk about the interesting mapping between pure Rashba BECs and chiral magnets with Dzyaloshinskii-Moriya (DM) interaction.

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