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Relativistic formulation of spin hydrodynamics framework based on GLW spin and energy-momentum tensors.

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Since the first positive measurement of the Λ-hyperon global spin polarization in heavy-ion collisions by STAR in 2017, the understanding of the nature of this phenomenon is one of the most intriguing challenges for the community. As relativistic fluid dynamics celebrates multiple successes in describing collective dynamics of the QCD matter in such reactions, the natural question arises whether the spin dynamics can also be modeled in such a framework. In this talk, the motivation for and recent outcomes of the experimental hunt for the macroscopic footprints of quantum spin in the relativistic heavy-ion collisions will be presented and the theoretical challenges connected with formulating its collective description will be discussed.

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