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## Application range of perfect spin hydrodynamics

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One of the challenging tasks for the heavy-ion community is the construction of spin hydrodynamics. As various formal issues require clarification, we investigate the application range of perfect spin hydrodynamics with different treatments of spin [1]. By considering a quantum spin density matrix (Wigner function) and a classical spin description, we derive fine constraints that connect the components of the spin polarization tensor, particle mass, temperature, and hydrodynamic flow. Along with the arbitrary reference frame, we consider the rest frame of the fluid and provide mutual relations between the conditions obtained in these cases. The outcome of our study will be advantageous for hydrodynamic modeling of heavy-ion collisions.

[1] Z. Drogosz, W. Florkowski and V.M., arXiv:2506.01537 [hep-ph].

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**Sitzung Einordnung:** Talks