# Seminar, Department of Physical Sciences, Bose Institute, Kolkata

## Spin polarization in relativistic heavy-ion collisions

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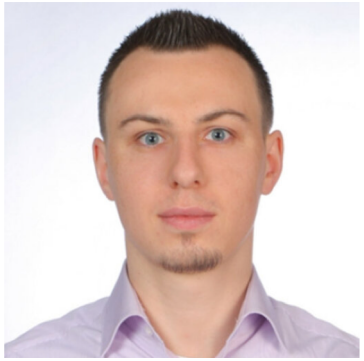

**Abstract:** Relativistic hydrodynamics has become a central tool for describing the collective behavior of many-body systems on many different scales - from the quark–gluon plasma to astrophysical plasmas. Traditionally, however, hydrodynamics cares only about energy, momentum, and conserved charges, while an intrinsically quantum property of matter - spin - is averaged out. Recent measurements of spin polarization of particles emitted in relativistic heavy-ion collisions challenge this separation: the produced quark–gluon plasma appears not only to flow like a nearly perfect fluid, but also to carry a sizable, dynamically generated spin polarization aligned with its vorticity. In this talk, I will discuss how these observations motivate an extension of relativistic hydrodynamics that treats spin as an active degree of freedom, as well as outline the lessons learned from its applications.

- **Date/time: February 10, 2026 (Tuesday) at 11:00 AM**
- **Venue: Room 204, Physics Seminar Room, (Second floor, UAC, BI)**