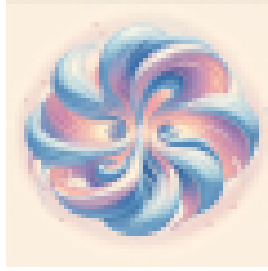


The 8th International Conference on Chirality, Vorticity and Magnetic Field in Quantum Matter



ID de Contribution: 88

Type: **Flash Talk (Plenary) + Poster**

The advection-diffusion equation in the density frame

lundi 22 juillet 2024 17:35 (5 minutes)

We investigate an alternative approach, to the MIS relativistic approach, developed to describe fluids without an underlying boost symmetry. This “density frame” approach has no non-hydrodynamic modes and no additional parameters compared to the Landau theory of first order hydrodynamics, at the price of not being fully boost invariant. We show that the density frame equations of motion follow Landau ones if the ideal equations are used to rewrite lab-frame time derivatives appearing in the dissipative strains as spatial derivatives. With this rewrite the equations are first order in time and are stable. In addition, we also show that the density frame equations can be derived from the relativistic kinetic theory.

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Classification de Session: Flash talk and posters