

Monday, November 7 @ 3:00 PM

Physics & Astronomy Building (PAB) 4-708

Schwinger-Keldysh fluid dynamics

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Wilsonian effective field theory in the vacuum has been well-understood for decades. Much less is known of the general principles for effective field theory in mixed states, that is, within the Schwinger-Keldysh formalism. In this talk I will describe recent progress in understanding the microscopic symmetries of Schwinger-Keldysh effective field theories with an emphasis on theories in thermal states. These symmetries include BRST-like supersymmetries which account for topological limits of Schwinger-Keldysh theories. As an application I will show how the theory of relativistic hydrodynamics arises directly from an effective action, replete with the positivity of local entropy production.