Contribution ID: 3 Type: not specified

Boosting the heat

The search for a relativistic theory of dissipation has lasted for 80 years. In the gravitational-wave era, we need, more than ever, a definitive answer to the question "how do heat and viscosity really work in relativity?". Our interpretation of the data coming from neutron-star mergers crucially depends on this. We need a theory which is formulated as a well-posed initial-value problem, sufficiently simple to be implemented in a numerical simulation, but sufficiently rich to capture all the physical insight we have. I will show that, contrarily to what is usually believed, we do not need a new theory, but a new understanding of the theories which are already available. The solution is already among us, we only need to look at it from the right perspective.

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Session Classification: Student presentations