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A semiclassical recipe for wobbly limp noodles in partonic soup

Thursday, 6 July 2017 15:00 (20 minutes)

In this talk, I present the main results of our recent paper where we compute the average squared distance travelled by an initially stationary light-flavour off-mass-shell coloured parton in a strongly-coupled thermal plasma using the gauge/string duality. The calculation involves taking an ensemble average of thermal fluctuations induced by Hawking radiation emanating from the black hole horizon in AdS_d - Schwarzschild on top of the leading order worldsheet of our limp noodle string. We argue that our results give us access to the time-dependent transverse momentum squared per unit pathlength picked up by a high momentum quark in a strongly-coupled thermal plasma and present the first time-dependent calculation of the transport coefficient, which is critically important for phenomenology in heavy ion collisions.

Apply to be
 considered for a student
   award (Yes / No)?

Yes

Level for award
 (Hons, MSc,
   PhD, N/A)?

MSc

Main supervisor (name and email)
and his / her institution

William Horowitz wa.horowitz@uct.ac.za

Would you like to
 submit a short paper
 for the Conference
 Proceedings (Yes / No)?

Yes

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