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Collisions in AdS, quark-gluon plasma and energy conditions

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Abstract

The collisions of gravitational shock waves in Anti-de-Sitter spacetime can give important insights into far-from-equilibrium physics of strongly coupled quantum field theory (sQFT), which hence has important implications for quark-gluon plasma. Recent progress I will review includes finite coupling corrections, which goes beyond the usual infinite coupling approximation. The end of the talk will analyse regions in the sQFT that violate the Null Energy Condition, but still satisfy and sometimes saturate the new Quantum Null Energy Condition (QNEC). This QNEC is derived from entanglement entropy and may in turn give insights into the emergence of a gravitational theory from the entanglement structure of a quantum field theory.

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Time: 14:00

Place: IMBM Seminar Room, Boğaziçi University South Campus