

Joint IOPP Colloquium and HENPIC The 256th HENPIC Seminar

Hard Probes in the Precision Era of Heavy Ion Physics

Speaker: Prof. Urs Achim Wiedemann
(CERN Theoretical Physics Department)

10:30-12:00 September 22, 2026, Tuesday (UTC+8)

Zoom meeting ID: 98708774920

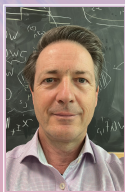
Abstract:

Over the last decades, experiments at RHIC and the LHC have established a picture of the quark-gluon plasma as a close-to-perfect fluid in which collective behavior develops on remarkably short timescales. Strikingly, essentially all signatures of QGP collectivity have also been identified in collision systems as small as pp and p-Pb, opening new questions about the emergence of collectivity and the microscopic properties of the created matter.

I will review our theoretical understanding of heavy-ion physics and the open questions coming within reach in the precision era of the HL-LHC, focusing on hard probes – heavy-flavor transport and jet quenching – whose interpretation requires conceptual advances in describing how they interact with an evolving QCD medium.

About the speaker:

Urs Achim Wiedemann is a senior physicist in CERN's Department of Theoretical Physics, where he currently serves as department head. His research has long focused on the theory and phenomenology of strong interactions under the extreme temperature and density conditions created in ultra-relativistic heavy ion collisions.



HENPIC website: <https://indico.ihep.ac.cn/event/11115>

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