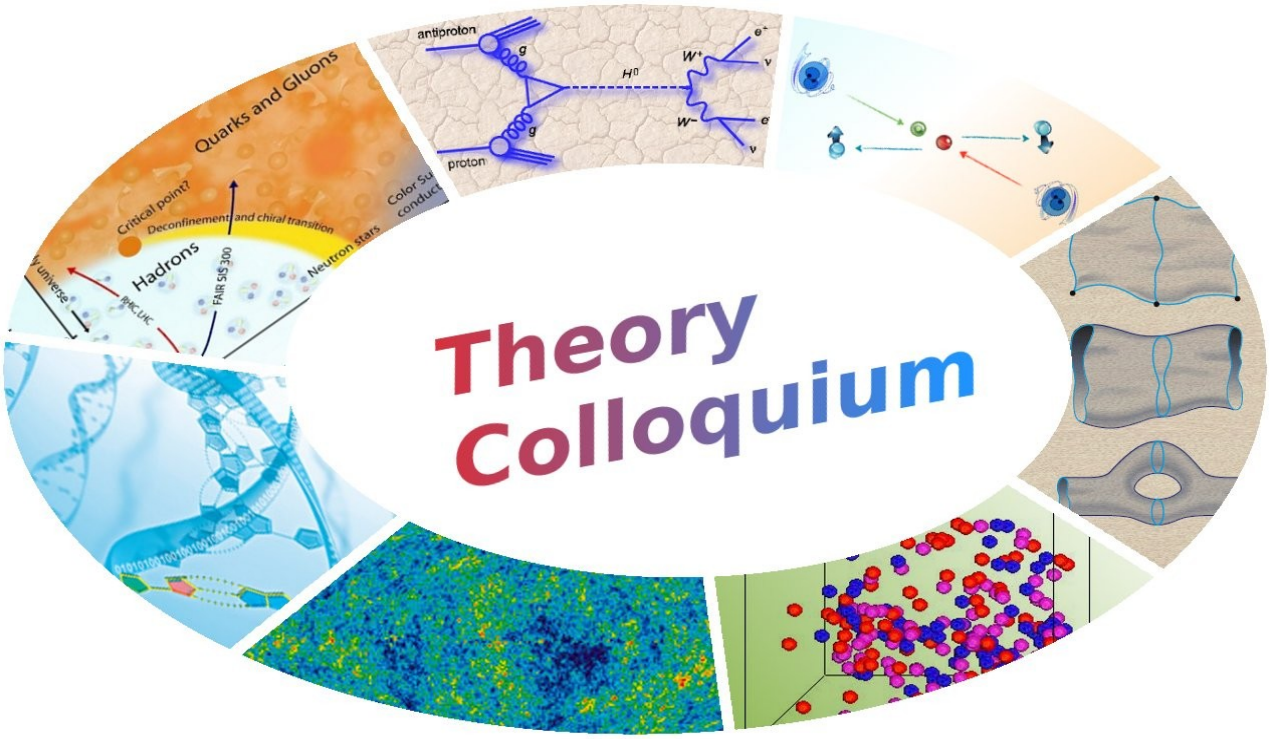
Dipartimento di Fisica e Sezione INFN di Torino



Venerdì 9 Giugno 2017, ore 14:30, Sala Wataghin

Jacopo Ghiglieri
(CERN)

Computing jet-quenching and the transport coefficients of the Quark-Gluon plasma

Two of the main findings of the experimental program on ultrarelativistic heavy-ion collisions are that the produced medium appears to have a very small shear viscosity to entropy ratio and that jets traveling through this medium are strongly suppressed (jet-quenching). I will review these two aspects and the theoretical challenges in their description, focusing in particular on the effective kinetic theory approach, which allows to compute both the transport coefficients, such as the shear viscosity, and the medium modifications to jets. After introducing the main features of this framework, which requires the assumption of weak coupling, I will review the recent efforts in extending such approach to next-to-leading order, so that one can estimate the uncertainties that arise when extrapolating to realistic couplings.