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## Dilepton production with SMASH – a new transport model

*Thursday, 18 February 2016 16:45 (25 minutes)*

In this talk we present the SMASH model, a next-generation hadronic transport implementation that is designed to describe the non-equilibrium evolution of hadronic matter in heavy-ion collisions. After laying out the basic principles and ingredients of the model, we discuss a few benchmark results that illustrate the correct behaviour of the code. We then present first dilepton spectra obtained with SMASH in the few-GeV energy range of GSI/FAIR, where the dynamics of hadronic matter is dominated by the production and decay of various resonance states. We show that many of the resonance-coupling effects that contribute to the in-medium spectral function of the rho meson arise quite naturally in the transport approach – not only in heavy-ion collisions, but in fact already in elementary pp collisions. Finally we also show some results from “coarse-grained” transport simulations, where one directly combines the transport dynamics with externally-provided in-medium spectral functions, and compare the results from both methods.

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