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## In-medium spectral functions of hadrons with the Functional Renormalization Group

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We present an overview of recent results on in-medium spectral functions and transport coefficients of hadrons using the Functional Renormalization Group approach. Our method is based on a recently developed analytic continuation procedure that allows to calculate real-time quantities like spectral functions at finite temperature and chemical potential. Results for the quark, the sigma and the pion spectral function as well as for the shear viscosity over entropy density ratio are shown using the quark-meson model [1]. These quantities are studied in different regimes of the phase diagram, in particular near the chiral critical endpoint. Moreover, recent results for in-medium vector and axial-vector meson spectral functions are presented which are based on an extended linear-sigma model including quarks [2]. It is shown how the rho and the a1 spectral functions become degenerate at high temperatures and chemical potentials due to the restoration of chiral symmetry. Future applications of these recent developments are discussed, which include the calculation of dilepton spectra and the identification of experimental signatures of the chiral phase transition in the QCD phase diagram.

[1] R.-A. Tripolt, L. von Smekal, J. Wambach, Int. J. Mod. Phys. E26 (2017) 1740028

[2] C. Jung, F. Rennecke, R.-A. Tripolt, L. von Smekal, J. Wambach, Phys. Rev. D 95 (2017) 036020

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### Collaboration

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**Primary authors:** Dr TRIPOLT, Ralf-Arno (ECT\*); Mr JUNG, Christopher (Justus-Liebig University Giessen); Dr RENNECKE, Fabian (BNL and University of Heidelberg); Prof. VON SMEKAL, Lorenz (Justus-Liebig University Giessen); Prof. WAMBACH, Jochen (ECT\* and TU Darmstadt); Mr WEYRICH, Johannes (Justus-Liebig University Giessen)

**Presenter:** Dr TRIPOLT, Ralf-Arno (ECT\*)

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