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What do we know about the shear-viscosity of QCD matter?

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The success of viscous Relativistic Fluid Dynamics (RFD) in describing hadron spectra and elliptic flow at RHIC has led to a strong interest in the transport coefficients of QCD, in particular the shear- and bulk-viscosity as well as the shear-viscosity over entropy-density ratio η/s . In my talk I will review our current state of knowledge on the shear viscosity of QCD matter at RHIC. In particular I will focus on the latest attempts to constrain η/s via model to data comparisons, the question whether low viscosity matter needs to be strongly interacting in the deconfined phase and on recent calculations of η/s for a hadron gas in and out of chemical equilibrium.