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Bulk viscosity of strongly interacting media: a dilepton perspective GOJKO VUJANOVIC, The Ohio State University, JEAN-FRANCOIS PAQUET, Duke University, SANGWOOK RYU, Frankfurt Institute of Advanced Studies, CHUN SHEN, Brookhaven National Laboratory, GABRIEL DENICOL, Universidade Federal Fluminese, SANGYONG JEON, CHARLES GALE, McGill University, ULRICH HEINZ, The Ohio State University — Recent viscous hydrodynamical studies of both photon [1] and hadron [2] observables at the Relativistic Heavy-Ion Collider (RHIC) and the Large Hadron Collider (LHC), show that bulk viscosity plays an important role in their phenomenological description. As bulk viscosity is a temperature-dependent quantity, it affects the development of the hydrodynamic momentum anisotropy differently in high- and low-temperature regions, thus also affecting anisotropic flow coefficients of different particles. Anisotropic flow coefficients of hadrons are sensitive to bulk viscosity at low temperatures of a hydrodynamical evolution, while dileptons are sensitive to all temperatures. Thus, bulk viscosity should affect dileptons and hadrons differently. This presentation studies how dilepton production gets modified owing to the presence of bulk viscosity at RHIC and LHC energies. Given the different collision energies (and thus temperatures) probed by RHIC/LHC, better conclusions regarding the role of bulk viscosity in high energy heavy-ion collisions can be drawn via comparisons of RHIC versus LHC results.

[1] J.-F. Paquet et al., Phys. Rev. C 93, 044906 (2016)
[2] S. Ryu et al., Phys. Rev. Lett. 115, 132301 (2015)

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