Quasi-Particle Theory of Shear and Bulk Viscosities of Hadronic Matter[1] JOSEPH KAPUSTA, University of Minnesota, PURNENDU CHAKRABORTY — A theoretical framework for the calculation of shear and bulk viscosities of hadronic matter at finite temperature is presented. The framework is based on the quasi-particle picture. It allows for an arbitrary number of hadron species with point-like interactions, and allows for both elastic and inelastic collisions. Detailed balance is ensured. The particles have temperature dependent masses arising from mean field or potential effects, which maintains self-consistency between the equation of state and the transport coefficients. As an example, we calculate the shear and bulk viscosity in the Linear Sigma Model. The ratio of shear viscosity to entropy density shows a minimum in the vicinity of a rapid crossover transition, while the ratio of bulk viscosity to entropy density shows a maximum.

Joseph Kapusta
University of Minnesota

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