

# Transport coefficients of a two component hadronic gas consisting of pions and nucleons

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We derive the transport coefficients of a two component Hadronic gas consisting of Pions and Nucleons. We solve the relativistic Boltzmann equation with binary collision ( $\pi\pi$ ,  $\pi N$  and  $NN$ ) employing the relaxation time approximation method. In medium effects are introduced through one loop self-energies in the propagator of the exchange of  $\rho$  and  $\sigma$  for the  $\pi\pi$  cross-section, and one loop self-energy in the propagator of the exchange of  $\Delta$  for the  $\pi N$  cross-section. We use phenomenological amplitude for  $NN$  collisions. The effect of early freeze-out in heavy collision is implemented through temperature dependent pion chemical potential. The temperature dependence of the transport coefficients are studied.

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