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Transport properties of hot hadronic matter in heavy ion collisions.

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We estimate the transport coefficients like shear and bulk viscosities of hot hadronic matter in van der Walls hadron resonance gas (VDW HRG) model in the relaxation time approximation. We also have compared these results with excluded volume hadron resonance (EV HRG) calculations. η/s decreases as the temperature of the hadronic system increases at a fixed baryon chemical potential. η/s in VDW HRG is always less than that of EV HRG case due to the large entropy density in VDW HRG compared to EV HRG case. At a fixed chemical potential, ζ/s in VDW HRG is also less than that of EV HRG case. We also have estimated these transport coefficients along the freezeout curve. There is an increase in chemical freezeout temperature in VDW HRG case determined from the universal condition E/N=ϵ/n~1 GeV. We also have calculated the variation of attraction parameter along the freezeout curve E/N=ϵ/n~1 GeV keeping the freezeout parameters same as in ideal HRG and the repulsion parameter fixed. We observe a nontrivial variation of attraction parameter along the freezeout curve where it increases in the meson dominated region and decreases in the baryon dominated region along the chemical freezeout curve. η/s in EV HRG is always large than that VDW HRG along the freezeout curve. This is also true for ζ/s.

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