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On the regimes of thermal conduction in IGM plasmas MIKHAIL MEDVEDEV, Univ of Kansas — Clusters of galaxies are the largest gravitationally bound systems of the universe, hence they are superior cosmological probes. For instance, observations of Bremsstrahlung emission from the gas in galaxy clusters help us deduce their masses and constrain certain cosmological parameters. The latter is not perfect, however. Particularly, thermal conduction in the intergalactic medium (IGM) is thought to play crucial role in plasma dynamics but its value is debated. Unlike collisional plasmas, energy transport in magnetized collisionless or weakly collisional plasmas of the IGM exhibits various regimes with vastly different values of the thermal conduction coefficient. Here we discuss these regimes and their implication for galaxy cluster physics.

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