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Anisotropic thermal conduction in cosmological cluster formation simulations MATEUSZ RUSZKOWSKI, University of Michigan, IAN PARRISH, University of California at Berkeley, MARCUS BRUEGGEN, Jacobs University — We investigate the role of the magnetothermal instability (MTI) in the cosmological cluster formation simulations. Our simulations self-consistently incorporate the effects of the field amplification by the structure formation (i.e., gravitational collapse and shearing) and by anisotropic thermal conduction, as well as the effects of violent sloshing motions (e.g., due to mergers) that tend to slow down the field growth. We quantify the effects of these processes on the temperature and density profiles, the strength and topology of the magnetic fields as well as the effective thermal conduction in the intarcluster medium.

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