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Heating mechanism affects equipartition in a binary granular system[1] NARAYANAN MENON, HONGQIANG WANG, Dept of Physics, U. of Massachusetts — Two species of particles in a binary granular system typically do not have the same mean kinetic energy, in contrast to the equipartition of energy required in equilibrium. We investigate the role of the heating mechanism in determining the extent of this non-equipartition of kinetic energy. In most experiments, different species of particle are unequally heated at the boundaries. We show by event-driven simulations that this differential heating at the boundary influences the level of non-equipartition even in the bulk of the system. This conclusion is fortified by studying a numerical model and a solvable stochastic model without spatial degrees of freedom. In both cases, even in the limit where heating events are rare compared to collisions, the effect of the heating mechanism persists.

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