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On a Class of Continuous Coagulation-Fragmentation Equations

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Abstract

A model for the dynamics of a system of particles undergoing simultaneously coalescence and breakup is considered, each particle being assumed to be fully identified by its size. Existence of solutions to the corresponding evolution integral partial differential equation is shown for product-type coagulation kernels with a weak fragmentation. The failure of density conservation (or gelation) is also investigated in some particular cases.



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