# Monomer Migration and Annihilation Processes

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Abstract: We propose a two-species monomer migration-annihilation model, in which monomer migration reactions occur between any two aggregates of the same species and monomer annihilation reactions occur between two different species. Based on the mean-field rate equations, we investigate the evolution behaviors of the processes. For the case with an annihilation rate kernel proportional to the sizes of the reactants, the aggregation size distribution of either species approaches the modified scaling form in the symmetrical initial case, while for the asymmetrical initial case the heavy species with a large initial data scales according to the conventional form and the light one does not scale. Moreover, at most one species can survive finally. For the case with a constant annihilation rate kernel, both species may scale according to the conventional scaling law in the symmetrical case and survive together at the end.

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