

# Coarsening dynamics in inclusion processes and duality

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The inclusion process is a stochastic particle systems with a strong connection to models of heat conduction and applications in population genetics. Due to attractive interaction between particles, the process can exhibit a condensation transition and the dynamics of this transition continues to be a subject of current research interest. We study the single site and size-biased dynamics in the inclusion process on a complete graph. The limiting process is a linear birth death chain, described by a mean-field equation. The use of the size-biased birth death chains for the inclusion process provides a strong tool to study the coarsening dynamics without absorption and significantly improved statistics. We also discuss different scaling regimes of the system parameter, related connections to applications in population genetics and Poisson Dirichlet distributions, and recent results based on duality.