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Title: Interacting Urn Processes with Multiple Drawings

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Interacting two-colour Urns with Multiple Drawings Interacting d-colour Urns with Multiple Drawings

Graph based models

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Abstract:

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We study urn models with two specific characteristics: interaction between urns is present, and multiple drawing of balls takes place. For these diverse kind of models, we try to prove synchronization results using Stochastic Approximation Theory, calculate rates of convergence, prove fluctuation results, and use computer simulations to plot the limiting distribution of the fractions of balls of different colours in the urn. We draw upon past work that has been done on similar kinds of models, and apply those techniques and ideas to our more generalized models. We also look at models involving more than two colours, and those

involving urns imagined to have been placed on the vertices of a graph, each urn interacting with its immediate neighbors.

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