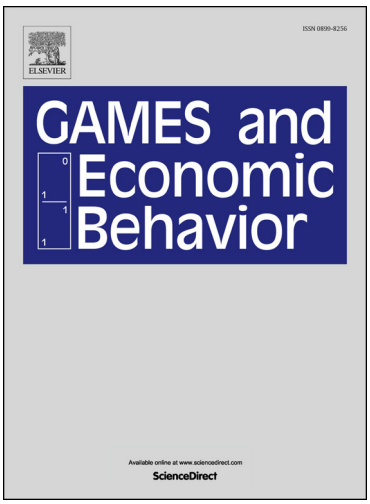
Accepted Manuscript



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PII: S0899-8256(17)30103-3
DOI: http://dx.doi.org/10.1016/j.geb.2017.06.005
Reference: YGAME 2702

To appear in: *Games and Economic Behavior*

Received date: 30 August 2016

Please cite this article in press as: Boncinelli, L., Pin, P. The stochastic stability of decentralized matching on a graph. *Games Econ. Behav.* (2017), http://dx.doi.org/10.1016/j.geb.2017.06.005

The Stochastic Stability of Decentralized Matching on a Graph*

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June 19, 2017

Abstract

We provide a perturbed evolutionary model of matching on a graph. First, we obtain that maximal matchings are the singleton recurrent classes of the model without perturbations. Then, we apply stochastic stability analysis considering two different error models: the link-error model, where mistakes directly hit links, and the agent-error model, where mistakes hit agents' decisions, and indirectly links. We find that stochastic stability is ineffective for refinement purposes in the link-error model – where all maximal matchings are stochastically stable – while it proves effective in the agent-error model – where all and only maximum matchings are stochastically stable.

JEL classification code: C73, C78.

Keywords: matching; graph; stochastic stability; maximal matching; maximum matching.

*The results in this paper partly overlap with those in a manuscript that has previously circulated under the title "Efficiency and Stability in a Process of Teams Formation". We thank for helpful comments Andrea Galeotti, Sanjev Goyal, Matthew Jackson, Shachar Kariv, Brian Rogers, Fernando Vega Redondo, Simon Weidenholzer and Leeat Yariv.

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