

Functional Agent-Based Markets Models

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Abstract

In this paper we study various market-models and how they can be described in a mathematical and functional way. From this we derive a theory for functional agent-based market-models and discuss their mapping to the pure functional computation in Haskell, Agda and Type Theory. It is important to note that we root our research in the field of agent-based computational economics and are explicitly interested in constructive approaches. Our research questions are: - What is the most general agent-based market model? - Can this market model be extended to be constructive?