

Advantages of a Multi-Paradigm Programming Language in Agent-Based Model Definition

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Abstract

This paper describes the advantages of the Functional Agent-Based Language for Simulations (FABLES) compared to some of the most widely used toolkits of Agent-Based Modeling (ABM). Using FABLES we implemented the StupidModel, the set of 16 simple ABM models those are designed to cover the most common features of ABMs. We also compared this implementation to the published Swarm, RePast and NetLogo implementations applying code complexity metrics. In addition we studied some other aspects of these toolkits, e.g. the programming burden of auxiliary tasks of model implementation (such as visualization, definition of model components, etc.).

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