

Bigambiglia, Paul; Delhom, Marielle; Santucci, Jean-François

An efficient and evolutionary hierarchical modeling and simulation approach. (English)

Zbl 1087.68688

Syst. Anal. Modelling Simulation 42, No. 2, 193-217 (2002).

Summary: Modeling and simulation have taken a preponderant place in the analysis and design of complex systems. The general environment we present in this paper provides a set of tools intended to make easier the creation and the simulation of evolving models. The originality of the approach is layed on the one hand in the combination of a hierarchical modeling and a discrete event simulation formalism, and on the other hand the implementation of object-oriented concepts during the realization phase. After a description of the existing works directly related to our approach, we introduce the basic modeling concepts and the defined object-oriented simulation architecture. Then, we propose a concrete application concerning the analysis of one complex natural system “the hydrologic behavior of the catchment basin”. This study ends with the presentation of results obtained from a set of real data.

MSC:

68U20 Simulation (MSC2010)

Cited in 1 Document

Keywords:

abstraction hierarchy; description hierarchy; temporal hierarchy

Full Text: [DOI](#)