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复杂动态系统实时仿真模型自动生成

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AUTOMATIC MODEL GENERATION OF REAL TIME SIMULATION FOR COMPLEX DYNAMIC SYSTEMS

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摘要	参考文献	相关文章

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摘要 提出了一种表示复杂动态系统数学模型的分层结构，探讨了模型变量与参数在实时仿真程序中的引用－赋值关系，提出了一个既包含了模型的数学特征，又包含了模型实时运行所需的信息的实时仿真模型分层结构。在此基础上设计了一个实时仿真模型库及实时仿真模型自动生成系统。

关键词： 实时仿真   分层模型   模型自动生成   模型库   动态系统

Abstract： With the view of automatic program for real time simulation of complex dynamic systems which can be of nonlinear and time variable characters, a study is made on automatic model generation of real time simulation. At first, a hierarchy to express the mathematical model of complex dynamic systems is proposed. Then, reference assignment relations among model variables and parameters in real time simulation software are discussed, and a frame which describes the reference assignment relations is introduced. The frame includes all the information required to transform a mathematical model into real time simulation software automatically, so the real time simulation model of complex dynamic systems can be expressed as a set of the frames. Based on the frame, a real time simulation model database and an automatical model generation system of real time simulation for complex dynamic systems are constructed.

Keywords： r eal-time simulation   hierar chical models   automatic simulation model generat ion   model base   dynamic systems

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