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基于VC和Vega Prime联合开发的巡航导弹仿真系统研究

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摘 要：对基于Visual C++和Vega Prime软件的巡航导弹仿真系统进行开发研究。其步骤是：通过Matlab/Simulink软件将已建立的导弹六自由度数学模型进行仿真，获取导弹的位置、速度等信息；然后，通过Multigen Creator软件建立导弹的实体模型，并用Vega Prime软件进行视景仿真；采用Visual C++进行系统集成，建立基于三者相结合的导弹实时参数感知仿真试验平台；最后，以所建立的导弹在自由空间飞行的运动仿真系统为例，验证该试验平台的可行性和实用价值。仿真结果表明：采用此方案能够在虚拟环境中比较真实地模拟巡航导弹的运动，对导弹的动力学模型和控制系统的验证和改进有一定的参考价值。

关键字：导弹；仿真系统；Visual C++软件；Vega Prime软件；Matlab/Simulink软件

Simulation system of cruise missile using VC and Vega Prime

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Abstract: The system’s development research was completed based on Visual C++ and Vega Prime softwares. The procedures were as follows. The information of missile’s position and position and so on were obtained by the simulation of missile’s six degrees of freedom mathematical model based on Matlab/Simulink software. Missile’s physical model was established using Multigen Creator software, and the model was used by Vega Prime software to drive Visual simulation. Finally, the feasibility and practical value of this simulation experimental platform were demonstrated by creating a free-flying simulation of missile in free-flying space. The simulation results indicate that this method is helpful in confirmation and improvement of cruise missile dynamics model and control system.

Key words:missile; simulation system; Visual C++ software; Vega Prime software; Matlab/Simulink software

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