农业装备虚拟试验系统平台的建立 Establishment of Virtual Experiment System Platform for Agricultural Equipment

臧宇 朱忠祥 宋正河 王猛 华博 毛恩荣

中国农业大学

关键词： 农业装备 虚拟现实 虚拟试验系统 三维建模 视景仿真

摘 要： 针对农业装备数字化设计技术研究的需求，利用虚拟现实场景建模工具MultiGen Creator 和实时场景驱动软件Vega Prime，结合VC++编程语言，开发出一套完整的农业装备虚拟试验系统平台。阐述了系统平台的软硬件组成、功能、结构以及系统的开发流程，对建模过程中运用到的方法、步骤和所涉及到的关键技术进行了研究，此外对Vega Prime应用中的关键技术和难点进行了探讨。测试试验表明，该系统平台运行稳定，具有可靠性和有效性。In order to meet the requirements of digital design technology of agricultural equipments, a virtual experiments system platform on agricultural equipments by using MultiGen Creator, Vega Prime software and VC++ programming language was developed. The whole component of the virtual experiment system platform was introduced, together with its function, framework, and system process. Furthermore, the methods, processes and other key techniques related to the modeling process were discussed as well. The key techniques and difficult points of Vega Prime application were analyzed, such as dynamics simulation of custom model and realization of motion. The experimental results show stable operation of the system with the reliability and validity.

查看全文（请使用Adobe Acrobat 6.0版本浏览） 返回首页 引用本文