图形、图像、模式识别

语义特征造型系统中特征模型转换的研究

陈立伟[1,2]，韩 磊[3]，王远志[4]，孙立镌[5]

1.西南科技大学 计算机科学与技术学院，四川 绵阳 621010
2.西南交通大学 CAD工程中心，成都 610031
3.山东服装职业学院 信息工程系，山东 泰安 271000
4.安庆师范学院 计算机系，安徽 安庆 246011
5.哈尔滨理工大学 计算机科学与技术学院，哈尔滨 150080

摘要　通过对新一代的语义特征模型的分析，参考Bidarra等人的研究成果，运用有效性标准，确立语义特征造型中特征转换的方法，在采用数学方法基础上，提出了怎样在数学模型中把设计特征表示转换成加工特征表示。设计过程中的设计特征由一组具有几何特征的面和一组属性（包括维数和具体特征）表示。加工过程中的加工特征由许多面和这些加工操作中面面之间有意义的关系来表示。特征转换中采用数学方法，能够在集合运算中形成加工特征，特征相交这种困难问题也可用数学描述，并且理论上能够转换，从而提高产品模型的可编辑性和易编辑性。

关键词　语义特征造型　特征转换　特征识别
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Research on feature conversion in semantic feature modeling systems

CHEN Li-wei[1,2]，HAN Lei[3]，WANG Yuan-zhi[4]，SUN Li-juan[5]

1.College of Computer Science and Technology，Southwest University of Science and Technology，Mianyang，Sichuan 621010，China
2.CAD Engineering Center，Southwest Jiaotong University，Chengdu 610031，China
3.Department of Information Engineering，Shandong Vocational College of Clothing，Tai'an，Shandong 271000，China
4.Computer Department，Anqing Normal College，Anqing，Anhui 246011，China
5.School of Computer Science and Technology，Harbin University of Science and Technology，Harbin 150080，China

Abstract

This paper analyzes the semantic feature modeling of new generation，consults research results of Bidarra etc，uses validity criterion，and establishes methods of feature conversion to semantic feature modeling.Based on the mathematical methods，this paper addresses the problem how to convert the design feature representation into machining feature representation in a mathematical model.Design features in the design domain are represented by a set of faces of each feature geometry and a set of attributes such as dimensions and material feature.Machining features in the manufacturing domain are represented by a number of faces and relationships between these faces that are meaningful for the process operations.Using a mathematical description of the feature mapping process，machining features can be deduced and formed by the set operation，and the difficult problem of feature interaction can be described mathematically and converted in theory，thus to make product model editing easier.

Key words　semantic feature modeling　feature conversion　feature recognition

通讯作者　陈立伟