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### 一种基于UML的面向对象需求分析方法

孙昌爱, 金茂忠, 刘超, 田丽从

北京航空航天大学计算机科学与工程系 北京 100083

### Object-Oriented Requirements Analysis Based on UML

SUN Chang-ai, JIN Mao-zhong, LIU Chao, TIAN Li-cong

Department of Computer Science & Engineering; Beijing University of Aeronautics and Astronautics; Beijing 100083; China

摘要

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**摘要** 提出一种实用的基于UML的需求分析及其建模方法,以活动图模型来表达业务模型,以概念层的对象图、状态图及交互图模型表达系统的结构逻辑及行为逻辑,以用例表达系统需求,讨论了需求分析及其建模的过程概念,方法实施的构造算法。该方法已经在空间天文望远镜系统需求分析中得到成功应用。

**关键词:** 需求分析 面向对象分析 UML 面向对象方法 软件工程

**Abstract:** Requirements analysis is an extreme important step of software development. A pragmatic approach to requirements analysis and its modeling is proposed in the paper, namely, UML Activity Diagram is used to model business workflow, UML Object Diagram in conceptual layer, UML State Diagram and UML Object Interactive Diagram are used to respectively model structural and behavioral Logic, and UML Use Case Diagram is used to model functional requirements, maps from requirements to activities in UML Activity Diagram, and maps from requirements to objects in UML Object Diagram. At the same time, the important process concepts in the requirement analysis and constructing algorithm are discussed in detail. The approach presented in the paper has got successful application in the requirement analysis of SST, namely Space Solar Telescope satellite system.

**Keywords:** requirements analysis OOA UML object oriented methodology software engineering

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