

# **Research and Design of Case-based System for Applications of Scientific Data**

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**【Abstract】** According to the requirements of analyses and application of Scientific data, a case-based database system for Applications of Scientific Data is proposed to facilitate the reuse of knowledge or experience derived from past application projects. The framework of knowledge representation model for Case-based System is described. The model includes the case's information of background, alternatives, application methods, process and results, etc. The algorithm designed for measuring case similarity is presented, which aims to improve the structuralized expression, case retrieval, match and reuse for the scientific data application. A software prototype is designed for applications of scientific data in different fields with the functionalities of case retrieval, reasoning and rules discovering. The system is a useful reference for design and implementation of new application project of scientific data.

**【Key words】** case-based system; Scientific data; knowledge management and application;