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论文

面向知识工程的采煤机截割部现代设计方法与系统

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摘要：

为实现采煤机截割部的智能设计，应用知识工程原理设计了采煤机截割部现代设计方案。研究了基于ε一致性准则粗糙集扩展模型的采煤机总体技术参数知识获取方法，为截割部设计奠定了推理基础。提出以面向对象表示方法为主、产生式规则和过程式表示方法为辅的混合知识表达模型，实现了采煤机截割部设计对象及其设计知识的集成。针对采煤机截割部设计过程，将实例推理、模型推理和规则推理3种知识推理技术结合，构建了符合设计思维的融合知识推理模型。在UG平台下开发了采煤机截割部现代设计系统，通过实例验证和企业应用证明该方法可行、有效。

关键词： 采煤机截割部；现代设计；知识工程；知识获取；知识表示；知识推理

Method and system of shearer cutting unit modern design oriented to KBE

Abstract:

For the realization of the shearer cutting unit intelligent design，the principles of KBE was applied to the shearer cutting unit modern design.The knowledge acquisition method of a rough set extended model based on ε coherence criterion about the overall technical parameter of the shearer was presented and laied a reasoning foundation for the design of cutting unit.The hybrid knowledge expression model was put forward，which was mainly to the knowledge representation of object oriented，as supplement to production rules and process knowledge representation method，and realized the integration of design object and knowledge.According to the process of design of shearer cutting unit，the fusion reasoning model building was accomplished based on the integration of CBR，RBR and MBR.The modern design system of shearer cutting unit was developed based on UG platform，which proved that the method is feasible and effective.

Keywords: shearer cutting unit；modern design；knowledge engineering；knowledge acquisition;knowledge representation；knowledge reasoning

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