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论文

基于本体映射采煤机零部件CAE设计方案获取

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摘要：

为解决采煤机零部件CAE设计重复性和低智能化等问题，建立了CAE设计服务本体库，提出加权-量化相似度映射算法，此算法综合考虑概念名相似度、属性相似度、结构相似度和实例相似度，基于AHP将各相似度比重进行量化，确保CAE设计方案获取结果的准确率和查全率。以采煤机截割部扭矩轴CAE设计为例，应用加权-量化相似度映射算法经过3次细化映射最终确定了CAE设计方案，得到CAE分析结果，实例验证了此方法的有效性。

关键词： 本体映射；采煤机；CAE设计；本体

Selection for CAE design scheme of shearer parts based on ontology mapping

Abstract:

Aiming at solving problems such as high repeatability and low intelligence existed in CAE knowledge integration of shearer parts，an ontology warehouse of CAE technique service was established，a weighted quantification similarity algorithm which considering the similarity of concepts，attributes，structures and instances was proposed.The similarity weights were quantified by utilizing the AHP，and the accuracy rate and recall rate of CAE design scheme were ensured.Taking torque axis of shearer CAE design as an example，through the three refining mapping，the final scheme of CAE was determined by applying the weighted quantification similarity algorithm，the results of the analysis was obtained.Finally，an application case was presented to illustrate the validity of the integration method.

Keywords: ontology mapping；shearer；CAE design；ontology

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