

联合收获机驾驶室人机界面评价方法 Evaluation Method for Man-machine Interface of Combine Harvester Cab

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摘要: 鉴于联合收获机驾驶室人机界面评价过程中会涉及到不确定性信息, 提出了一种证据推理与模糊隶属度相结合的评价方法, 建立了联合收获机驾驶室人机界面评价模型, 克服了以往评价方法在处理不确定性信息和不完整信息方面的不足, 效用函数的引入简化了方案优劣排序, 便于决策。应用实例表明, 该方法能够有效地处理不确定性信息, 其结果表示更符合人们对不确定性信息的处理习惯。 The evaluation of man-machine interface for the cab of a combine harvester often involves some factors that are qualitative, lacks of available information and can only be assessed by human judgments, which inevitably involve various kinds of uncertainties and incompleteness. In view of this, an evaluation method combined the evidential reasoning approach with fuzzy membership degree was proposed to build the evaluation model for the man-machine interface of a combine harvester cab, which overcame the defects of handling information with uncertainty and incompleteness. Man-machine interface element can be assessed to a grade interval if it cannot be precisely assessed to only one grade. The introduction of utility function simplified the process of alternative ranking and decision. Applied example showed that this method could handle uncertain information effectively and the representation of results was much more coincident with people's habit to deal with uncertain information than other methods.

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