MAIQS:无线传感器网络中基于**mobile agent**的智能化数据查询方法研究与实现

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摘　要：

基于移动代理（mobile agent）的数据查询方法具有节约能耗、容错性能好、扩展方便等特点，特别适合于传感器网路。本文提出了基于移动代理的智能化数据查询系统（MAIQS）。系统将产生式规则系统应用到传感器网路的查询优化和agent生成中，通过规则匹配的方式优化查询路由，精简传输代码。基于传感器网络移动代理中间件系统Agilla，结合一个小规模的室内温度监测系统实现了本文的部分创新成果。实验结果表明，系统简便易用，实现了基于移动代理数据查询的自动化执行。

关键词：传感器网路 ，数据查询，产生式规则系统，移动代理

MAIQS:Mobile agent based Intelligent Query Method for Wireless Sensor Network

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Abstract:

In this paper, we have proposed a mobile agent based intelligent query system (MAIQS). In this system, production rule system is used in query's optimization and agent's production for the first time in WSNs. Application-related knowledge and history information is described in the form of rules and facts which are the foundation of reasoning. What's more, query automatism is implemented in this system. When a user input a query description ,the system translate it into standard form. Next , reason mechanisms and other strategy are used to optimize agent's routine, reduce agent's redundant function code and product agent. Agents will do the remained works to complete this query. At last, we implement the system based on Agilla, which is a middleware system for WSNs, to inspect a room's temperature.

Keywords: WSNs, data-query, production rule system, mobile agent