

A

10MW高温气冷实验堆过球计数信号实时处理方法

@李华\$清华大学核能技术设计研究院!北京 100084 @李富\$清华大学核能技术设计研究院!北京 100084

收稿日期 2002-7-16 修回日期 网络版发布日期:

摘要 研究了基于10MW高温气冷实验堆过球计数系统的过球计数信号实时处理方法。该方法采用了相对幅值的信号峰提取技术,消除了绝对幅值变化带来的不利影响,准确性高,处理速度快。滤波算法除了可加快信号峰的提取速度外,还能消除噪声干扰,并自适应地确定无球通过时的参考电平,解决了信号的零点偏移问题。该方法在信号采集的同时实现信号连续处理,且支持强大的并行运算,可同时处理多个信号通道。

关键词 [10MW高温气冷实验堆](#) [过球计数系统](#) [信号处理](#) [实时](#)

分类号 [TL621](#)

Real-time Processing on the Fuel Ball Counter Signals in the 10 MW High Temperature Gas-cooled Test Reactor

LI Hua, LI Fu (Institute of Nuclear Energy Technology, Tsinghua University, Beijing 100084, China)

Abstract The paper describes the signal processing method of the digital fuel ball counting system designed for the 10 MW high temperature gas-cooled test reactor (HTR-10). The signal peak is searched by the relative amplitude instead of the absolute level, so as to reach high accuracy and speed. The special filtering algorithm not only can accelerate the searching speed for the signal peaks, but also can eliminate the random disturbance, and identify adaptively the reference level when no ball is passing. Furthermore, the real-time acquisition and on-line processing of the signals from the multiple counters are carried out parallelly and simultaneously.

Key words [10 MW high temperature gas-cooled test reactor \(HTR-10\)](#) [fuel ball counting system](#) [signal processing](#) [real-time](#)

DOI

通讯作者

扩展功能

本文信息

▶ [Supporting info](#)

▶ [\[PDF全文\]\(185KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中包含“10MW高温气冷实验堆”的相关文章](#)

▶ [本文作者相关文章](#)