

## 钠沸腾噪声探测研究

@李茂季\$中国原子能科学研究院!北京 @杜呈瑞\$中国原子能科学研究院!北京 @高雅云\$中国原子能科学研究院!北京 @蒋廷三\$中国原子能科学研究院!北京 @陆道纲\$中国原子能科学研究院!北京

收稿日期 1991-3-30 修回日期 网络版发布日期:

**摘要** 文章叙述了钠沸腾噪声探测研究进展,建立了离线和在线均可进行的高频和低频信号采集和处理系统,引进、开展、改进和编制了信号处理、故障诊断、事故报警和自回归模型分析等软件包。应用这些硬软件对水和钠沸腾噪声进行了探测和分析。结果表明,沸腾噪声信号的自功率谱密度(APSD)的幅值明显大于沸腾时的值,用自回归模型判别因子分析,可实现钠沸腾在线实时诊断和监护。

**关键词** [钠沸腾噪声](#) [频谱分析](#) [自回归模型判别因子](#)

分类号

## SODIUM BOILING NOISE DETECTION RESEARCH

LI MAOJI; DU CHENGRUI; GAO YAYUN; JIANG TINGSAN; LU DAOGANG China Institute of Atomic Energy, P.O. Box 275, Beijing

**Abstract** The paper describes the progress of the research work on sodium boiling noise detection. High frequency and low frequency noise signal analysis system with on-line or off-line signal acquisition and processing were set up. We introduced, developed, improved and designed the signal processing, accident alarming, failure diagnosis and autoregression model analysis computer softwares. Utilizing these hard-ware and software, we detected and analysed the noise signals of sodium and water boiling. The results show that the amplitude of APSD of noise signals in boiling was obviously larger than that in no boiling. Using distinguishing factor of autoregression model analysis, we can realise on-line and real-time boiling diagnosis and surveillance.

**Key words** [Sodium boiling noise](#) [Frequency spectral analysis](#) [Discrimination factor of autoregression model analysis](#)

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