

反应堆工程

# 气空间对自然循环两相流动系统稳定性影响实验研究

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**摘要** 微沸腾工况运行是核供热堆实现热电联供的关键性问题之一, 微沸腾运行工况下, 两相流系统稳定性更加不利和复杂。通过实验研究, 揭示了气空间对两相流系统稳定性的影响, 研究提出通过气空间改性来抑制系统不稳定。实验结果表明, 在气空间加装隔离孔板, 对两相流系统不稳定振幅有明显的抑制作用, 对两相流系统不稳定边界也有改善。

关键词 [核供热堆](#) [两相流](#) [稳定性](#) [气空间](#)

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## Experimental Study on Influence of Gas Space on Two-Phase Flow Stability

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**Abstract** The slight boiling operation of the primary loop coolant is one of the key ways of nuclear heating reactor co-generation of electricity and heat. In the case of the slight boiling operation condition, two-phase flow system stability becomes worse and more complicate. The influence of gas space on two-phase flow stability was testified experimentally, and a new method to restrain system instability by changing gas space structure was proposed based on the experimental results. The inserting of plates with small hole can effectively restrain the flow oscillation amplitude and improve the boundary of the two phase flow stability on some extent.

**Key words** [nuclear](#) [heating](#) [reactor](#) [two-phase](#) [flow](#) [stability](#) [gas](#) [space](#)

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