

反应堆工程

## 基于双群点堆模型的小型压水堆反应性扰动的动态模拟

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**摘要** 本文采用双群点堆动力学模型耦合传热集总参数模型, 分别对小型压水堆高、低功率条件下反应性扰动进行模拟, 并与三维仿真模型进行比较。结果表明: 本模型可较好地模拟小型压水堆反应性扰动情况下的功率、温度变化趋势及峰值, 且分析时间短, 能满足工程精度要求, 可用于小型反应堆正常运行以及事故状态下反应性扰动的现场超时预测。

**关键词** [双群点堆模型](#) [压水堆](#) [反应性扰动](#)

**分类号** [TL327](#)

## Dynamic Simulation of Reactivity Disturbance for Small Pressurized Water Reactor Based on Double Groups Point Reactor Model

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**Abstract** The lumped parameter model of heat transfer coupling with double group point reactor model was used to simulate reactivity disturbance for small pressurized water reactor at higher power condition and lower power condition, respectively. The results of simulation from this method were compared with those of calculation from three dimensions model. It is shown that this model is suitable to be used to simulate the peak and change trends of power and temperature when a reactivity disturbance is induced into a small pressurized water reactor, and it can be used to predict the danger of reactivity disturbance under normal and accident conditions for small pressurized water reactor because it costs shorter computation time and satisfies the ask of engineering precision.

**Key words** [double groups point reactor model](#) [pressurized water reactor reactivity disturbance](#)

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