



## 台灣 ERG 數據中心 TAIWAN ERG Data Center

Title:

# Practical class, BOUT++ ELM simulations

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演講地點：綜合大樓1樓 R.48111B

Abstract:

BOUT++ is a library for solving partial differential equations (PDEs) using finite difference and finite volume methods on laptops or supercomputers with thousands of cores, written in C++. The main application is to simulating the edge and divertor regions of tokamak fusion devices, including edge turbulence, filamentary structures in the Scrape-off Layer (SOL), Edge Localised Mode eruptions (ELMs) and divertor detachment physics. BOUT++ can however also be applied to many other areas, including fluid flows and magnetic reconnection.

In this course the basic physics of plasmas in tokamaks will be introduced, then the fluid models used to describe the relatively cold edge region, and the numerical methods used to solve them. The lectures will cover the principles and underlying theory, with some introduction to BOUT++. The practical classes will focus on the code itself, and how to run and analyse simulations, and start using the code. If students have a laptop with Linux installed, or a Linux virtual machine, they can learn how to install and run BOUT++ on their own computer.

歡迎大家踴躍參加!