



Contribution ID: 471 Contribution code: TUP017

Type: Poster Presentation

## Benchmarking COMSOL and OPAL at Crocker Nuclear Lab

*Tuesday 12 August 2025 16:00 (2 hours)*

Accurate studies of particle behavior in accelerator chambers require precise magnetic field maps with regard to the iron geometry. We generated a realistic magnetic-field map for the 76-inch cyclotron at Crocker Nuclear Lab using COMSOL Multiphysics, then imported it into the OPAL (Object-Oriented Parallel Accelerator Library) software to model particle trajectories. It accurately simulates beam dynamics, provides reliable validation against measured data, and establishes a foundation for future cyclotron optimization and upgrades.

### Please consider my poster for contributed oral presentation

Yes

### Would you like to submit this poster in student poster session on Sunday (August 10th)

Yes

### Footnotes

### Funding Agency

University of California Office of the President grant LF-20-653232

### I have read and accept the Privacy Policy Statement

Yes

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**Session Classification:** TUP: Tuesday Poster Session

**Track Classification:** MC5 –Beam Dynamics and EM Fields