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Modelling and simulating accelerator magnets

Tuesday 21 November 2023 11:00 (1 hour)

In this lecture, we show how to set up a finite element model of an accelerator magnet. We discuss the challenges in simulating accelerator magnets and come up with a list of requirements for commercial or freeware simulation tools. The challenges include detailed geometries, nonlinear and hysteretic materials, superconductivity, composite materials, complicated eddy-current effects, multi-physics and multi-scale phenomena, uncertainties and large-scale computing.

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