Magnets Tutorial

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Contents

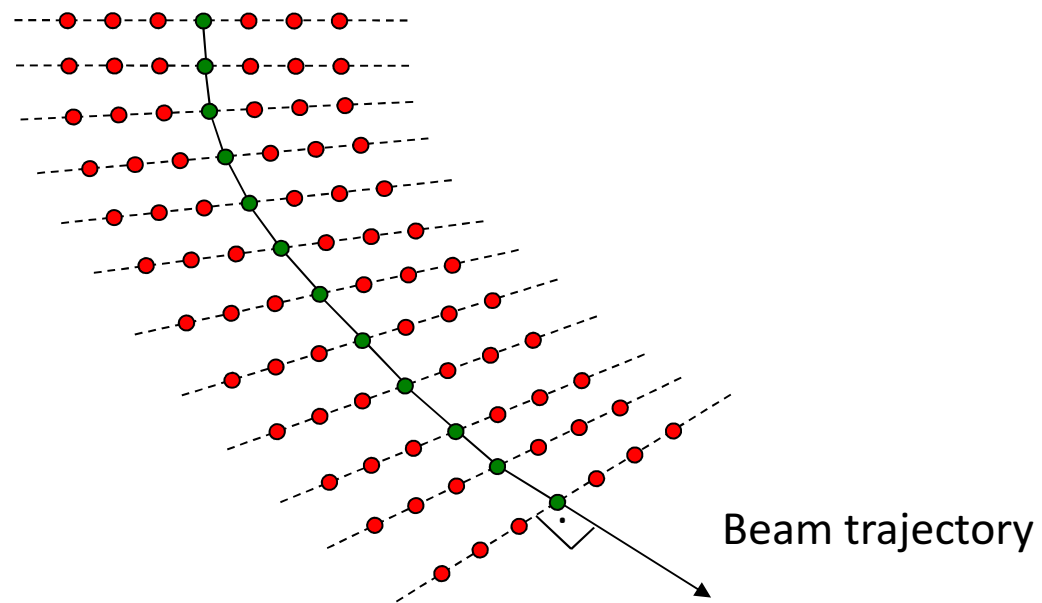- ## Tutorial #1 – Quadrupole
  - Basic principles, modeling, symmetries, etc…
  - Simple plots, field visualization;
  - Harmonic analysis;
  - Hands-on

- ## Tutorial #2 – Dipole
  - Effective length
  - Trajectory
  - Hands on

- ## Tutorial #3 – Sextupole
  - Modeling
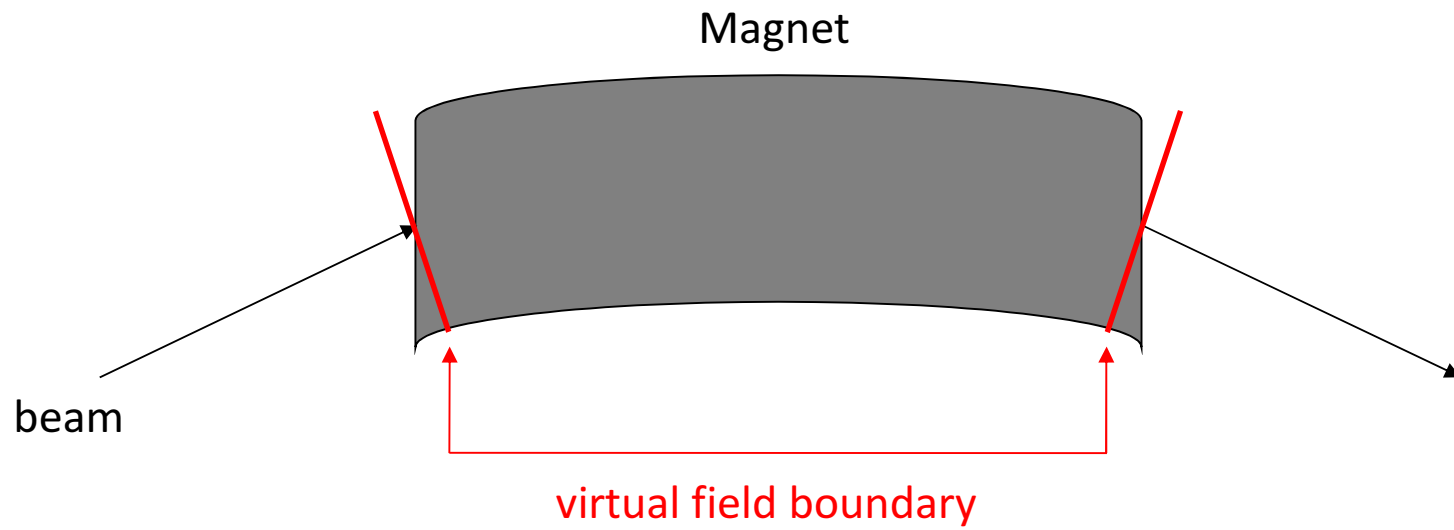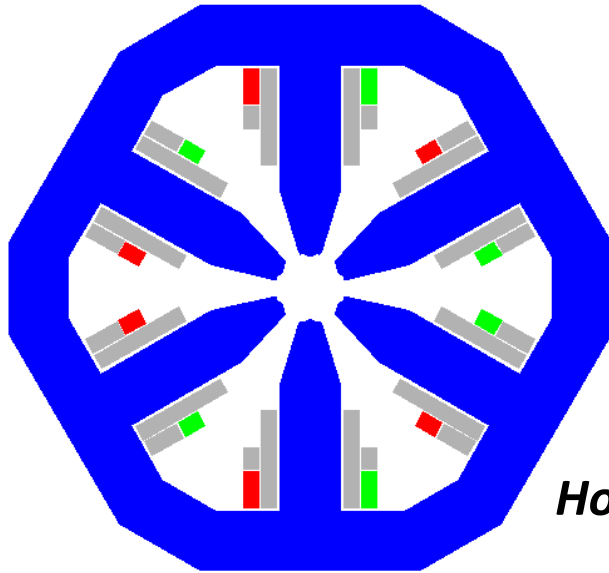 - Correctors

Software

- 2D
  - Poisson
  - FEMM
  - Opera 2D
  - Ansys
  - Comsol

- 3D
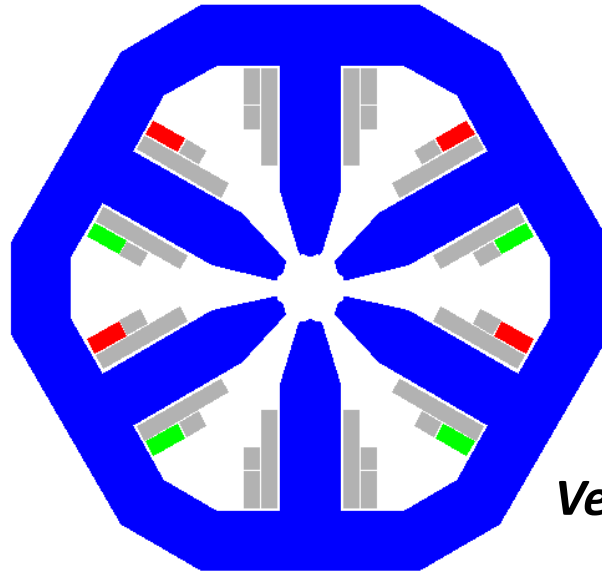 - Radia*
  - Opera 3D
  - Ansys
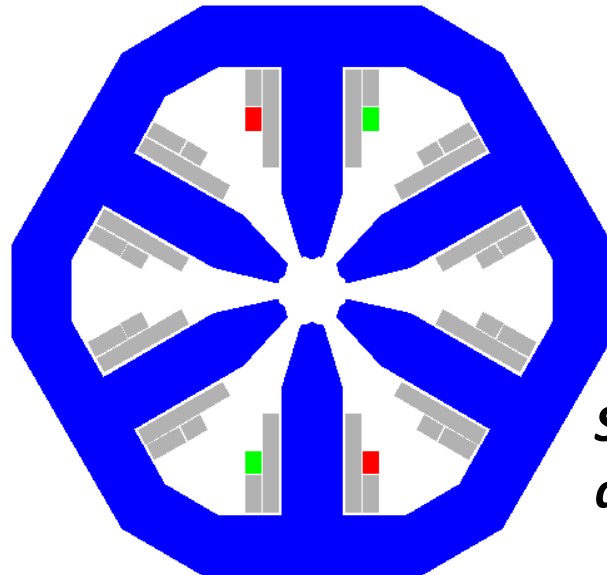 - Amperes
  - Comsol

* Needs Mathematica$^{©}$ to run

Beam trajectory

Magnet

beam

virtual field boundary

Hor.

Ver.

Skew quad