

Muon Shield Plans

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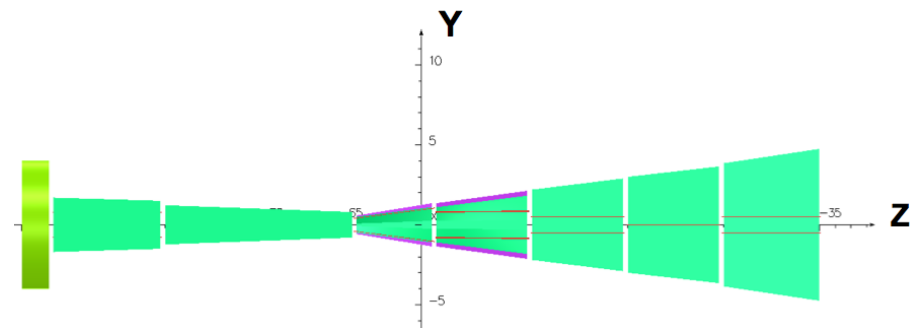
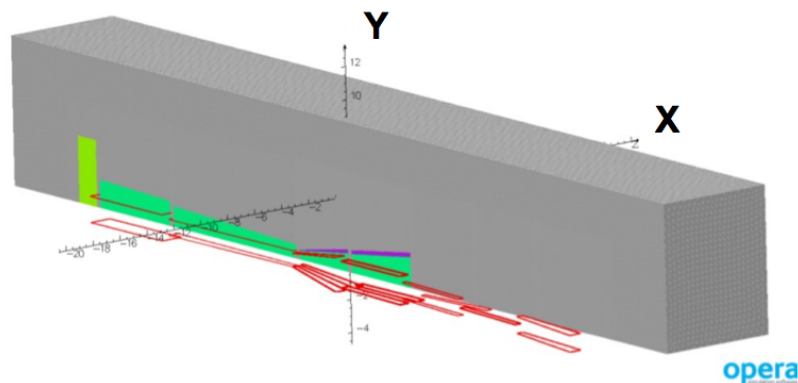
V. Bayliss, T. Bradshaw, M. Courthold, T. Rawlings (RAL)

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Reminder: TP muon shield design

- Engineering aspects of ~48m TP muon shield design calculated with FE model, good agreement with GEANT
 - First look at further details of design : coil shape, material and placement, yoke material (e.g. use of grain-orientated steel → implication for power consumption, cooling)
 - No consideration of support structures [→ scattering], mechanical stress/strain



~35m long warm shield (+conical vessel)

- Simulation side [HD,TR+student effort]
 - Further optimisation of design; Automate investigation?
 - Consider magnetised hadron absorber
- Investigation of engineering aspects [Further RAL effort]
 - Engineering items above for modified design
 - Division into sections → coil and yoke manufacture (potentially long-lead time), stepped geometry → feedback into simulation study
 - Consider manufacture and connection between any laminations
 - Refine cost estimate
- Try to optimise gain vs cost, taking into account e.g. hall size

(graded) superconducting proposal

- Investigation of feasibility [[RAL, contacted Novosibirsk](#)]
 - Consideration of proposed setup – return field, coil design
 - Make first magnetic model
 - Evaluation of cost
 - Refine quench calculation
- Simulation side
 - Further optimisation of design
- Again, try to optimise gain vs cost