

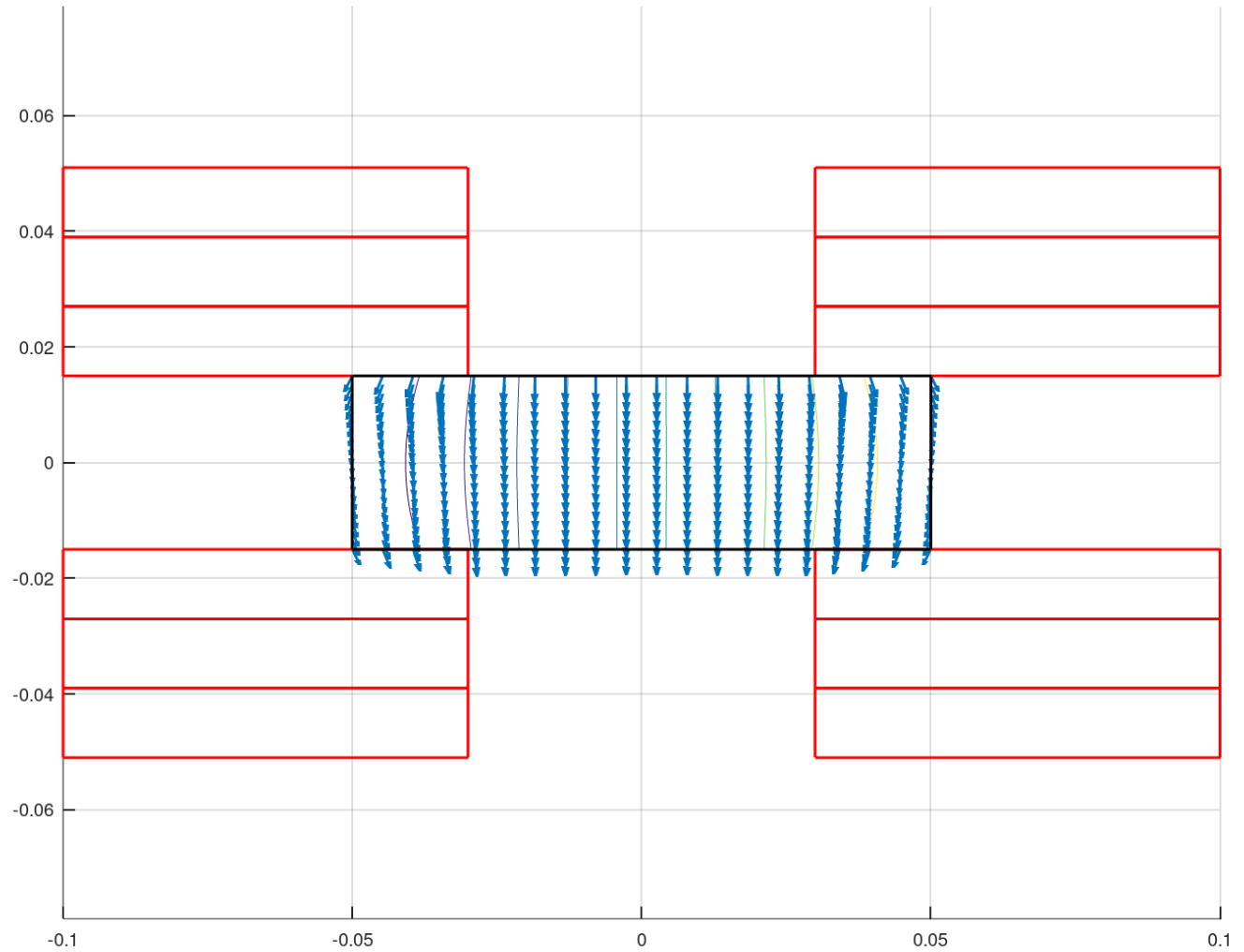
Accelerator
SC dipole magnet

Concept

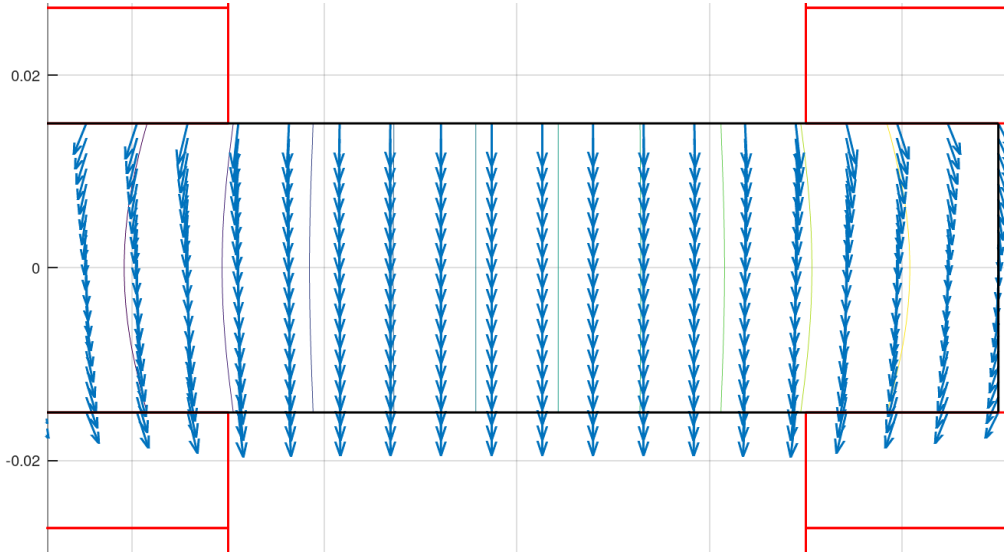
- Attempt to use uniform technology through the collider complex
 - HTS windings (for robustness)
 - High current density (for cost reasons)
 - Operation at high temperature (for energy efficiency)
- Simplify magnet design, profiting from the small aperture (30 mm x 100 mm)
- Adapt coil geometry

Coil

Flat racetracks
12 mm tape
 $J_E = 650 \text{ A/mm}^2$
 $B = 10 \text{ T}$



Field quality (no iron)



Calculations at $R_{ref} = 10$ mm

$$B_1 = 10.355$$

$$b_3 = -7.2 \text{ units}$$

$$b_5 = -1.4 \text{ units}$$

$$b_7 = -0.03 \text{ units}$$