

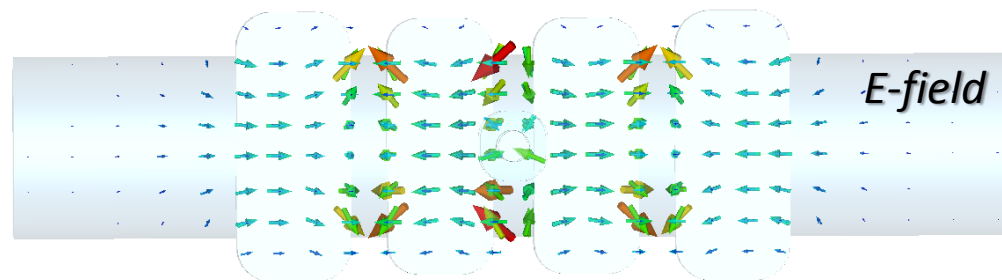
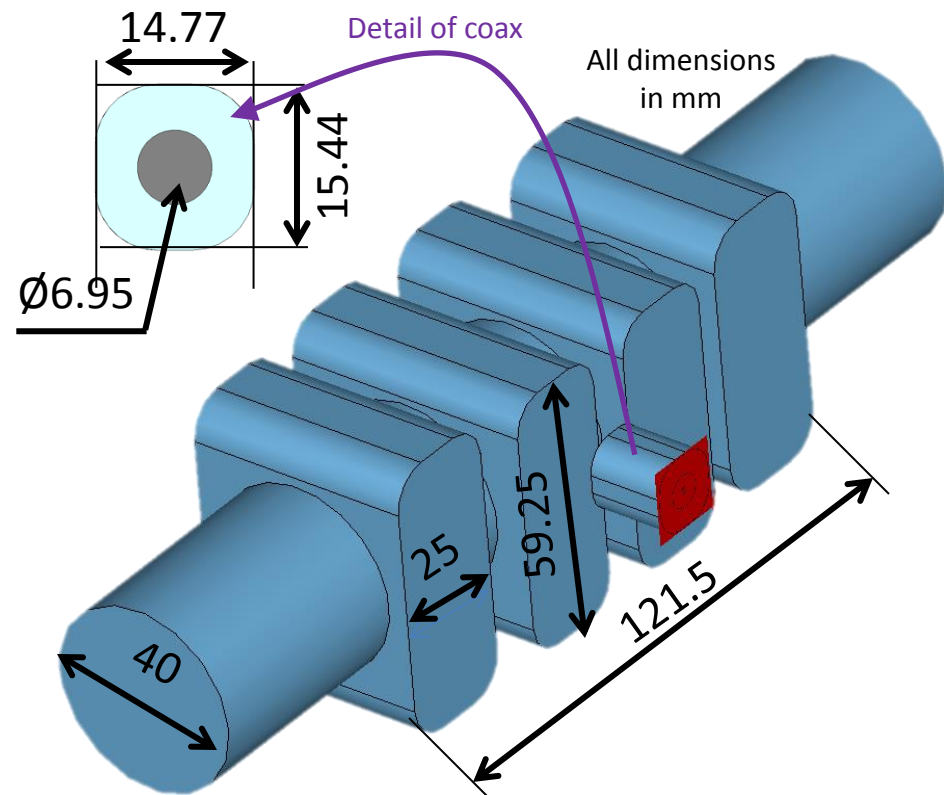
Stochastic cooling kicker for LHC – design 1

RHIC longitudinal stochastic cooling kicker design rescaled for LHC stochastic cooling system

| | |
|-------------------------------------------------------|--------------|
| f (mode 12) | 4.805 GHz |
| R/Q | 142 Ω |
| Q_0 | 1.16e4 |
| Q_{ext} | 2640 |
| Q_{load} | 2150 |
| β_c | 4.4 |
| V_c ($P_{\text{forw}}^{\text{max}} = 40\text{W}$) | 6 kV |
| t_{fill} | 143 ns |

File: "s90_Scaled6_rpipe20mm_QextUp4_UpRoQ9"

$$P_{\text{forw}} = \frac{V_c^2}{4R/Q \cdot Q_{\text{ext}}} \cdot \frac{(\beta + 1)^2}{\beta^2}$$



Stochastic cooling kicker for LHC – design 2

Aim: increase R/Q by rounding the cavity cells to reduce power requirement

On work