BS4 residual field depending dump conductivity

B. Balhan

Assumptions

Magnet Gap 87 mm, Gap inside ceramic tube 65 mm

34 A/mm2 coil section ( 10/86 mm)

B0 @ Inom = 0.4217 T

Switch off ramp of 5 ms

Located at 23.5mm from 0 (magnet center)

Yoke material used in simulations: VM111

Single Graphite dump block; conductivity **1.0E+04, 1.0E+05, 1.0E+06** Siemens/m,

Geometry used in Vector Fields Opera 2D

Dump inside ceramic vacuum chamber. Simplified magnet geometry.

Time steps simulated

Assumed 5 ms ramp down, starting at 100 µs.

4 time steps simulated

(red dots in graph)

1. Beginning of ramps
2. Halfway through the ramp
3. End of ramp
4. 1 ms after ramps stop