SACM contribution to the DBD

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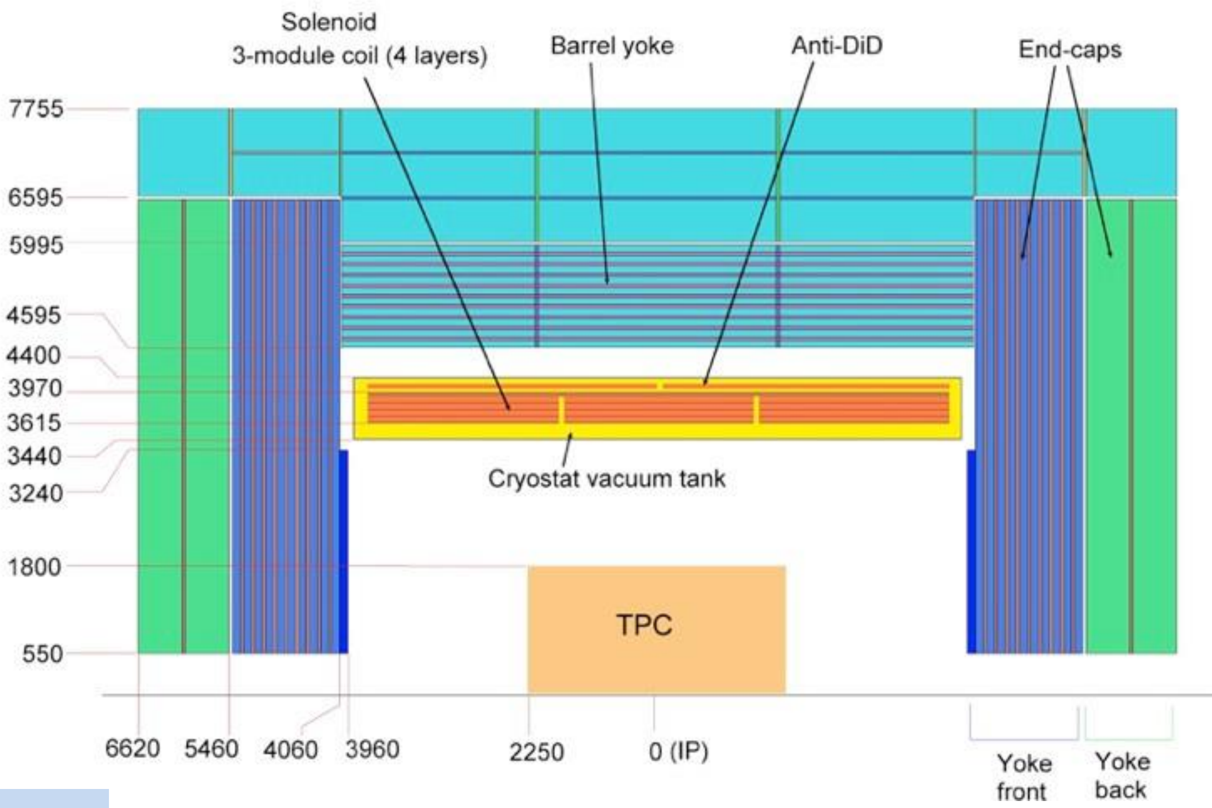
ILD SUPERCONDUCTING MAGNET

3 parts

- SC solenoid (SACM)
- SC anti DID (SACM)
- Yoke (DESY)



Main parameters SC solenoid

- nominal field: 3.5 T
- design field: 4 T
- warm bore: 3.44 m
- length: 7.35 m

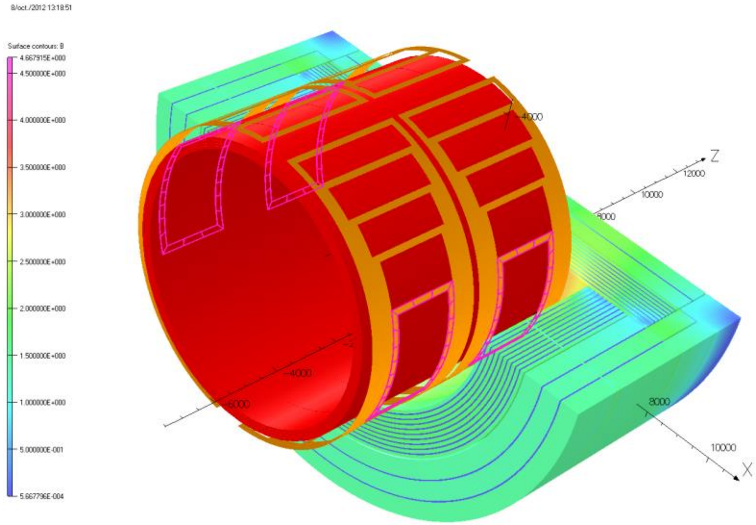
At 4 T

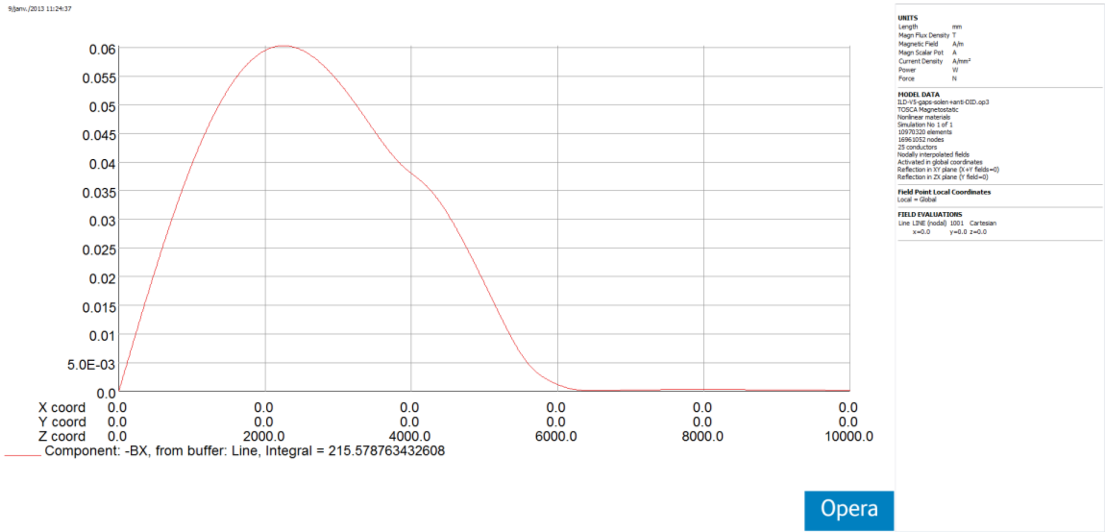
- max. field on conductor: 4.6 T
- current: 22.4 kA
- stored energy: 2.3 GJ
- density of stored energy: 13 kJ/kg

Anti -DID

- max. dipole field: 0.035 T
- inner radius: 4.16 m
- total length: 6.8 m

Anti DID





Component: -BX, from buffer: Line, Integral = 215.578763432608

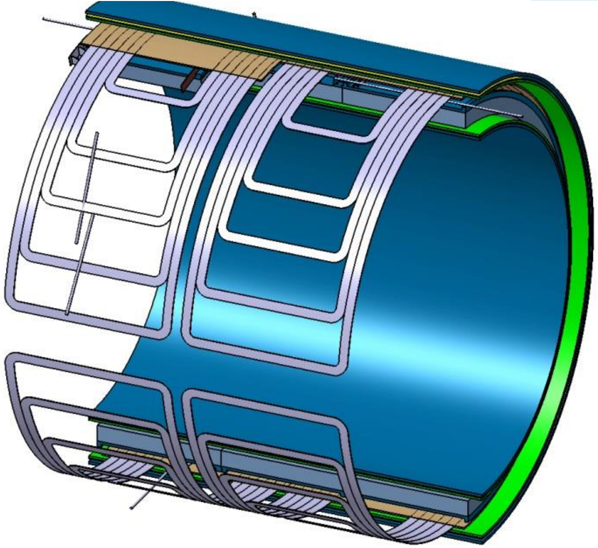
UNITS

Length	mm
Magn Flux Density	T
Magnetic Field	A/m
Magn Scalar Pot	A
Current Density	A/mm²
Power	W
Force	N

MODEL DATA
ILD-V5-gaps-solen+anti-DID.op3
TOSCA Magnetostatic
Nonlinear materials
Simulation No 1 of 1
10970320 elements
16961052 nodes
25 conductors
Nodally interpolated fields
Activated in global coordinates
Reflection in XY plane (X+Y fields=0)
Reflection in ZX plane (Y field=0)

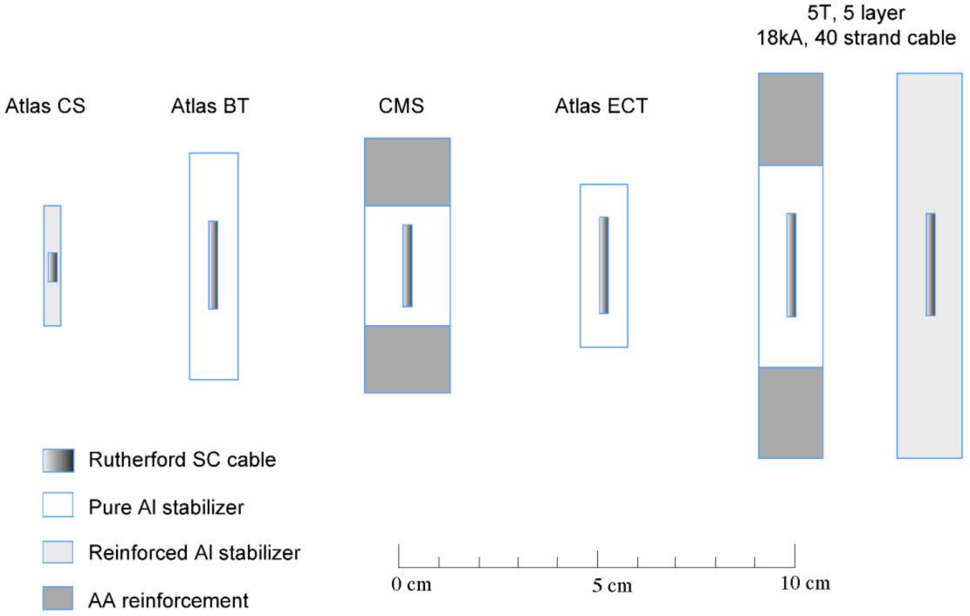
Field Point Local Coordinates
Local = Global

FIELD EVALUATIONS
Line LINE (nodal) 1001 Cartesian
x=0.0 y=0.0 z=0.0



Autres points

- Costing (avec LLR: H. Videau, C. Clerc): 131 kILCU
- Développement conducteur renforcé (CERN): en cours



(d’après B. Curé, CERN)

- Note LC-DET 2012-008 (avec CERN et DESY): pour avril 2013
- Mesures magnétiques: développement à envisager