Buncher Schematics & CAD Model based on MICE Cavities

Alan Grant
Daresbury
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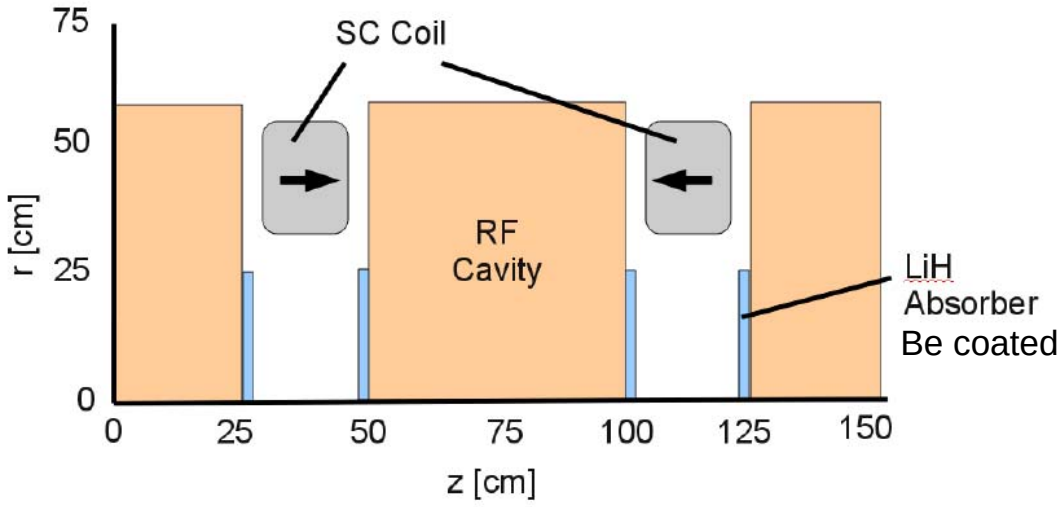
Muon Front End

Cooling

- Cooling section consists of 100 cells 0.75m in length
- Total section length 75m
- 100 normal conducting RF cavities and 100 superconducting coils
- Cavities RF frequency 201.25 MHz, gradient 15 MV/m.
- Cavity length 0.5m, Coil length 0.15m



Two Cells

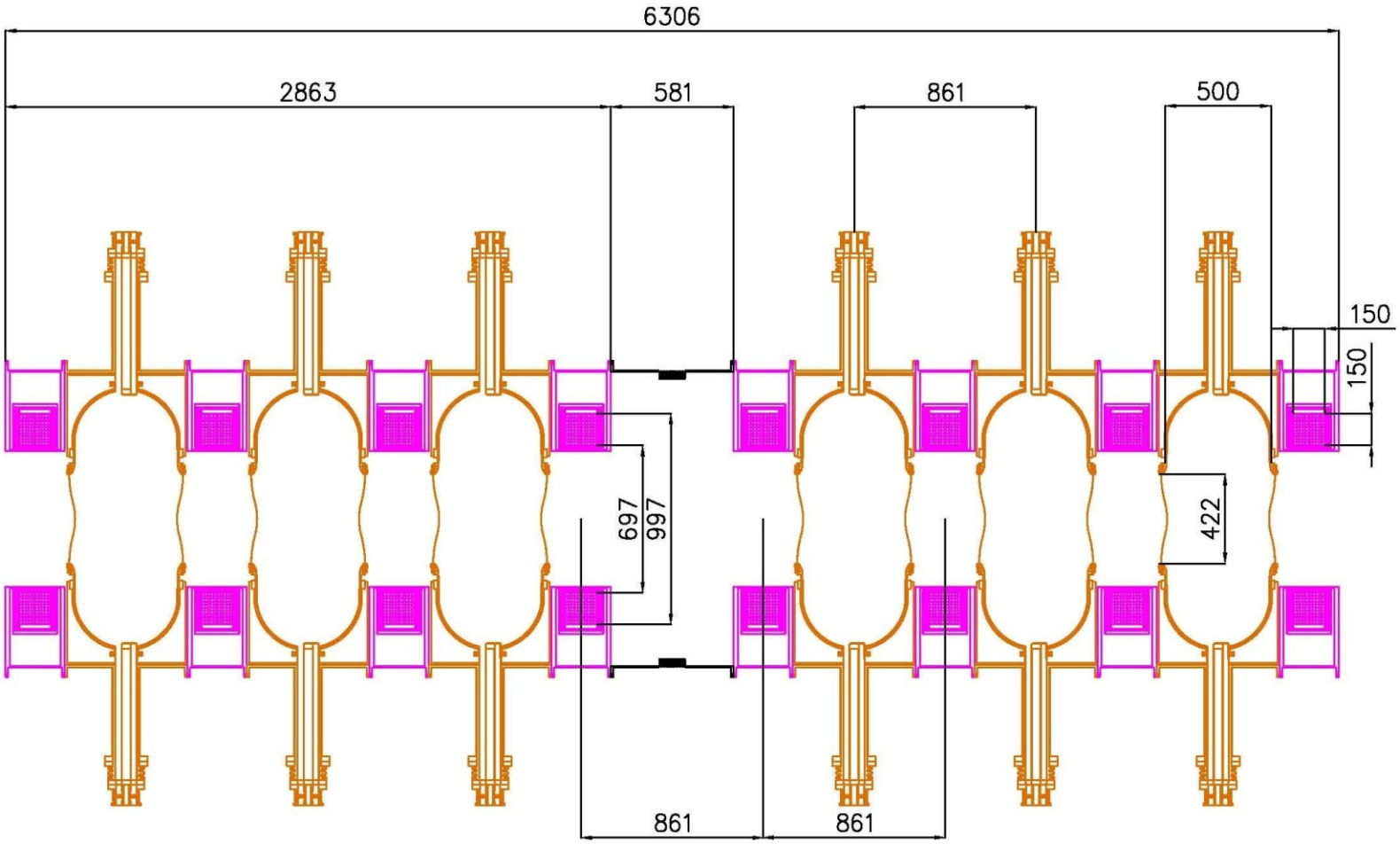
Cavity :

(number of cells) length [m]	(50) 75
cell length [m]	1.5
frequency [MHz]	201.25
gradient [MV/m]	15
phase [deg]	35
voltage [MV]	750
length of 1 cavity [m]	0.5
radius of 1 cavity [m]	No data
length of LiH [m]	0.011
radius of LiH [m]	No data
length of vacuum space [m]	No data
z start position of first cell [m]	155.1

Coil :

number of coils	100
length of 1 coil [m]	0.15
radius of 1 coil [m]	0.35
radial thickness [m]	0.15
current density [A/mm^2]	±107
Peak value on-axis [T]	2.8

Cooling Section CAD Model



Cooling Cell Section showing 2 modules

Contains 6coils & 8 cavities = total length 6.306m

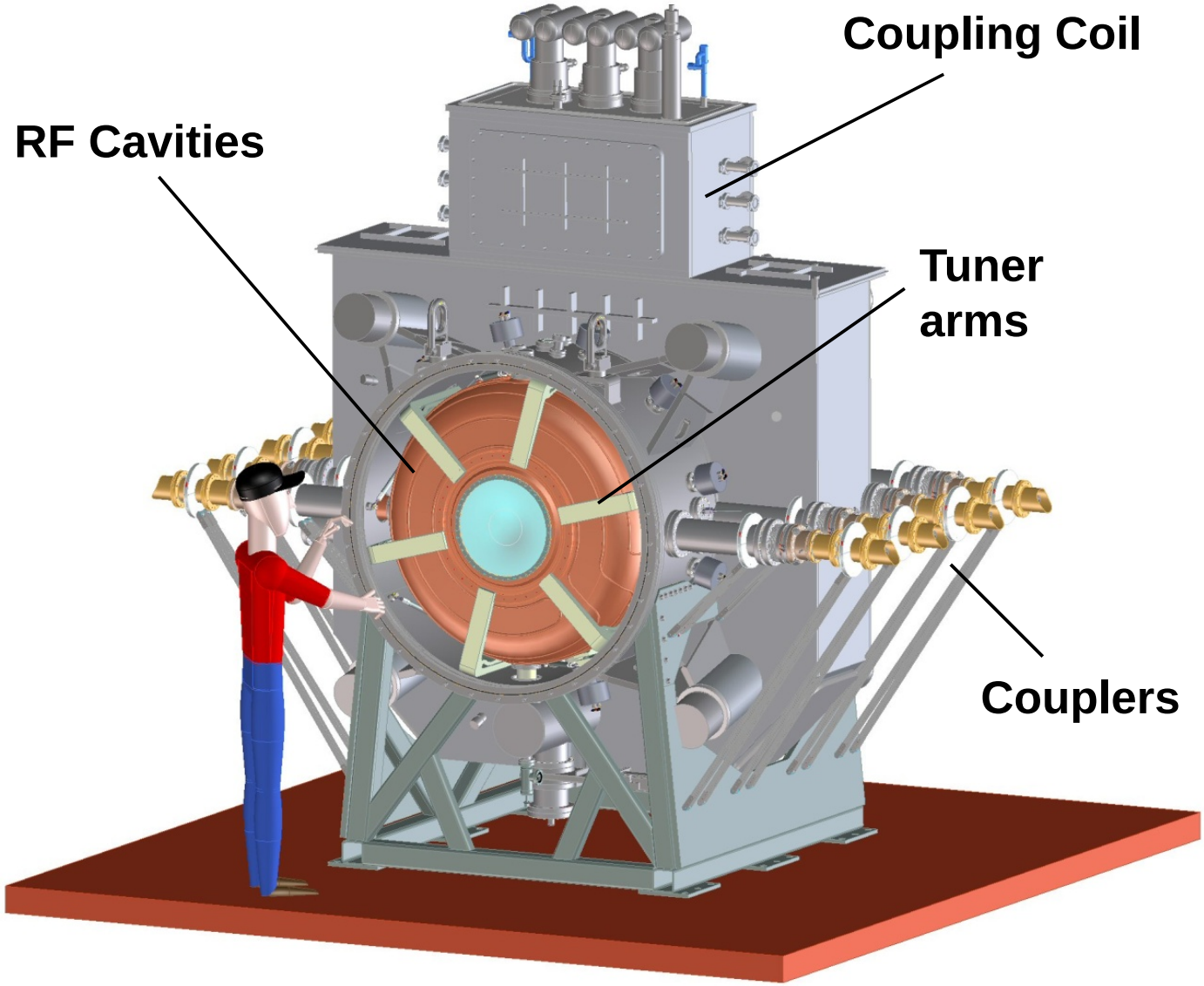
Cavity module maintained at 0.5m as schematic.

Coupling coil cross section as schematic .15m x .15m

Bellows required between each cavity / coil module.

Cell length 0.86m NOT 0.75m. This is for vacuum vessels.

MICE RFCC Module Overview



Overview of MICE RF system, Derun Li, LBNL, MICE CM32 @ RAL, UK (Feb. 8th 2012)