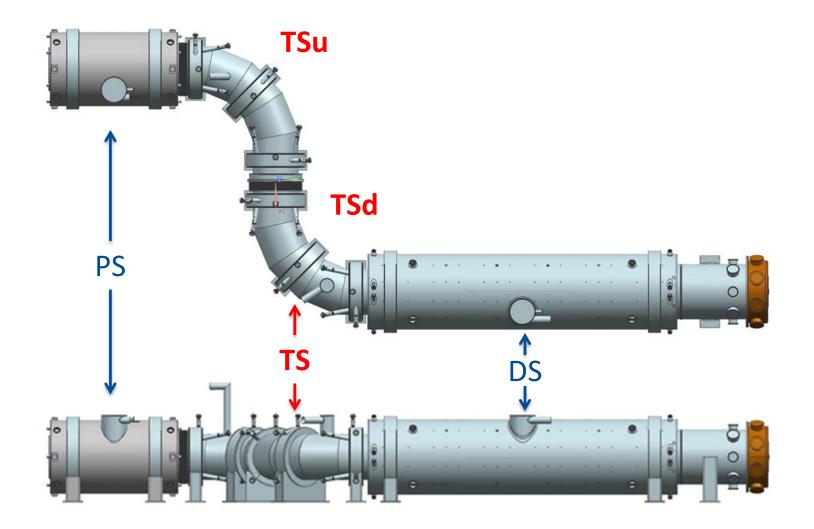


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The Mu2e Transport Solenoid Alignment Issues

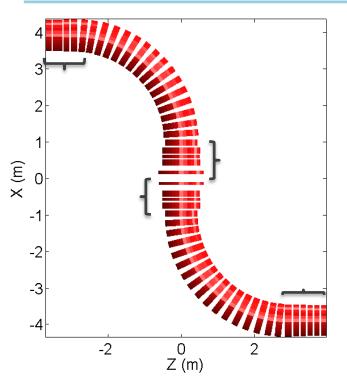
Veronica Ilardi 23 September 2015 Scope



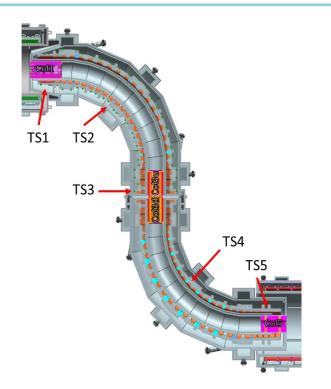


2 V. Ilardi - The Mu2e Transport Solenoid Alignment Issues

Design – Magnet System



- TS is formed by 52 solenoid coils.
- Most coils have the same aperture. TS3 coils have slightly bigger aperture to help with the large gap between cryostats.

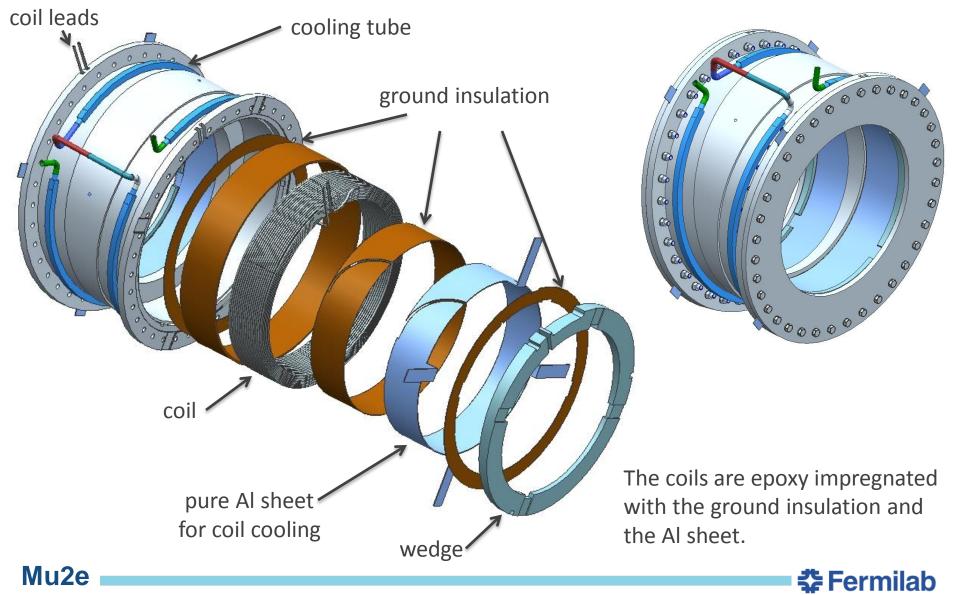


 There are four collimator elements. COL3u and COL3d are located in TS3 and they are used to filter particles based on electric charge and momentum.

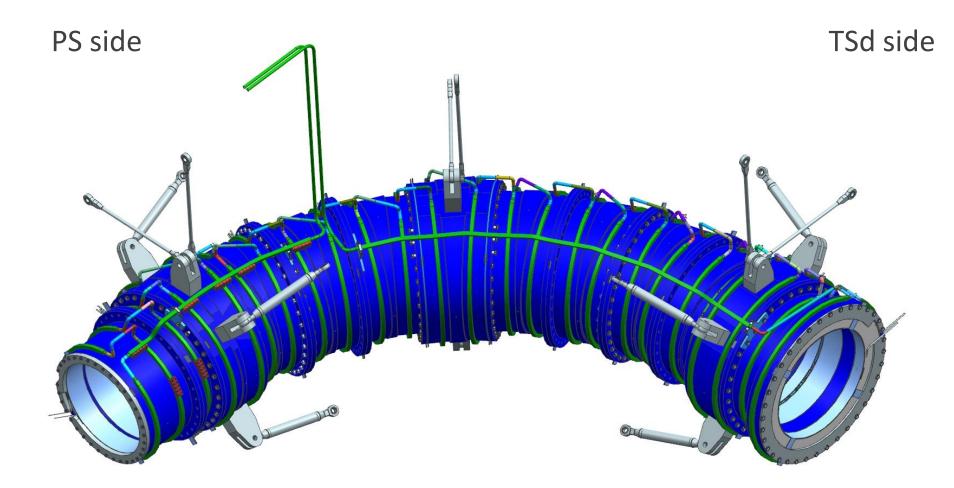


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TS coil module prototype



Design – Cold mass assembly

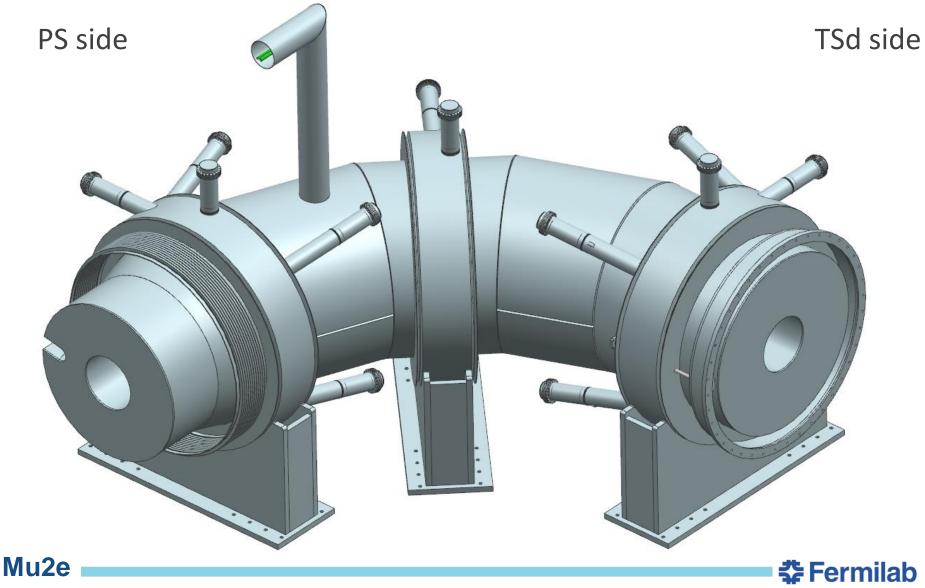


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5

Design – Cryostat assembly



6

TS support rod prototype

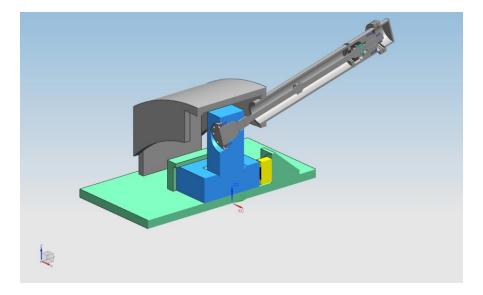




Photo by Reidar Hahn

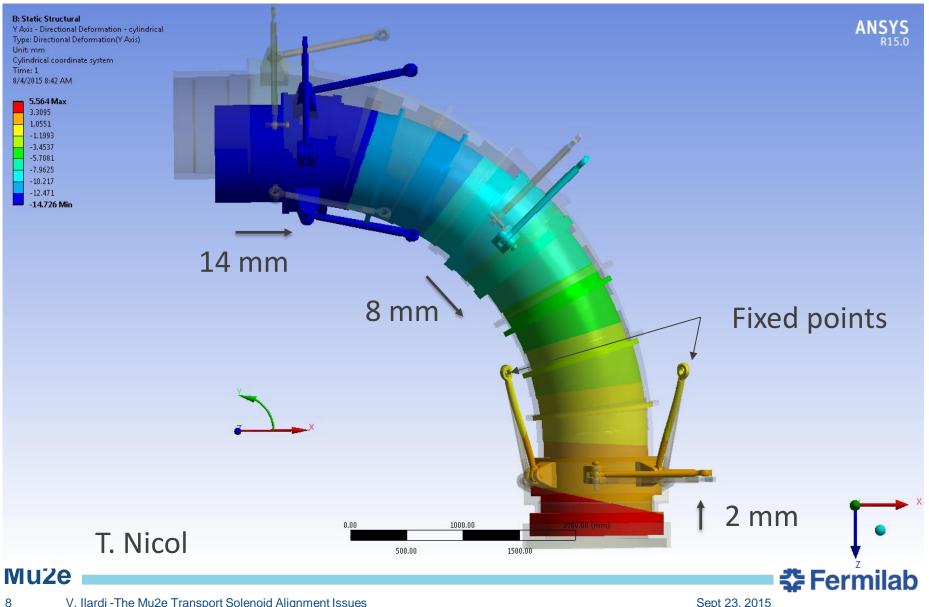


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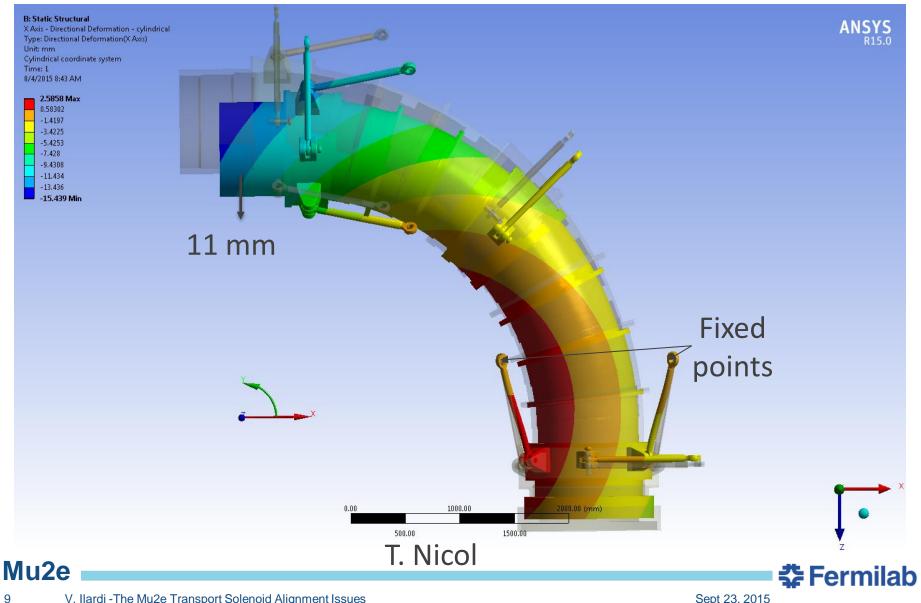
7

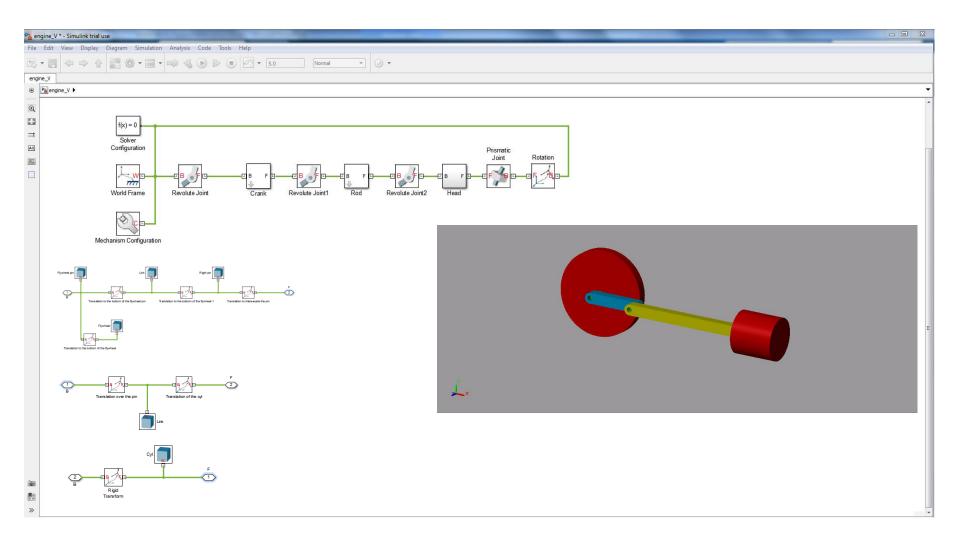
TSU support lug displacement during cool-down



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TSU support lug displacement during cool-down

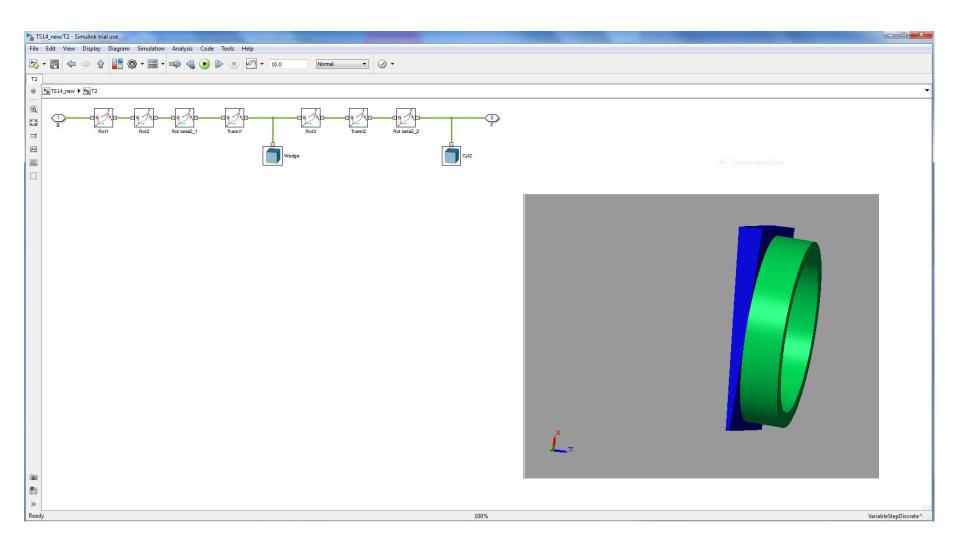




10 V. Ilardi - The Mu2e Transport Solenoid Alignment Issues

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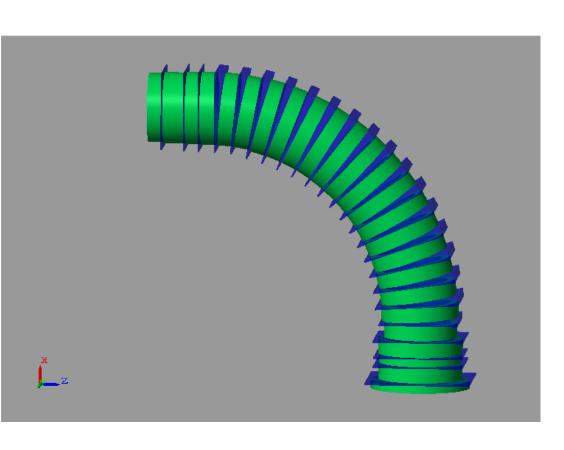
TS14_new - Simulink trial use	
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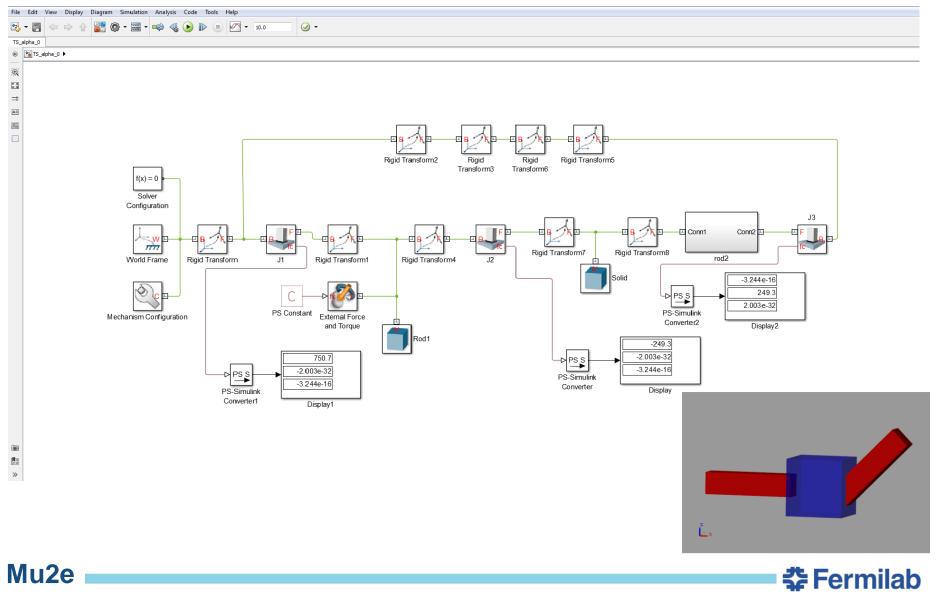
Fermilab

📔 Block Paramet	ters: T2			23
– Subsystem (m	ask)			
Parameters				
Inner radius 2				
405				
Outer radius 2				
469				
Length 2				
277.75				
Height 2				
1018				
Angle 2				
0				
Base 2				
20				
Length 1				
184.96				
Coefficient				
1-0.4/100				
	ОК	Cancel	Help	Apply





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Project proposal

- Mechanical simulations of the cold masses under different non-ideal initial conditions. The goal is to evaluate the ranges of expected variations of the forces applied on the rods, in order to contribute to understand the alignment of each support rod;
- Comparing the results obtained from the Mechanical Modeling and those from the Finite Element Method analysis.

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Thank you!

Veronica Ilardi 23 September 2015

