

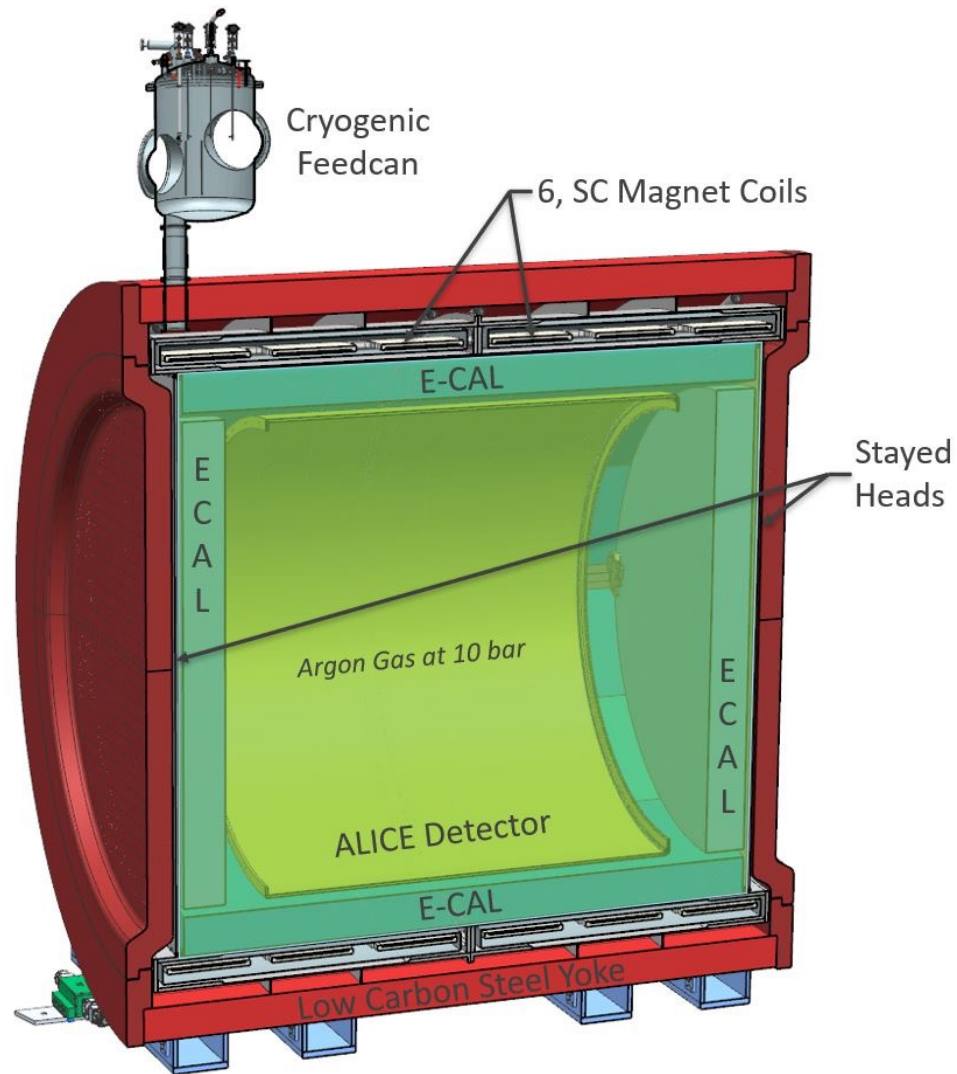
ND-GAr/ND-GAr-Lite Magnet System

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ND-GAr-Lite Discussion

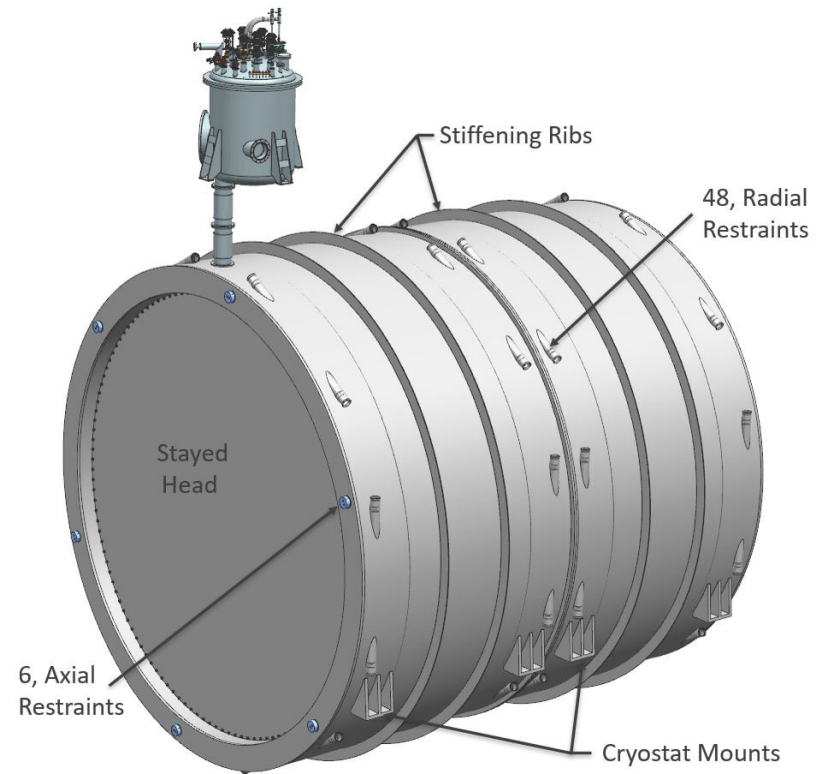
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ND-GAr



Magnet System: Superconducting Solenoid

- The magnet system consists of two components: SC solenoid and partial return yoke.
- SC solenoid
 - 0.5T
 - Following design of JINR magnet
 - https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjGh7HGw5_zAhVTWs0KHcQGCMgQFnoECBwQAQ&url=http%3A%2F%2Fmpd.jinr.ru%2Fwp-content%2Fuploads%2F2019%2F09%2FMAGNET-TDR-aug_2019.pdf&usg=AOvVaw11oXj6JBDExkKou3bidaay
 - The vacuum vessel also acts as the central cylinder of the pressure (10 bar) containment system for the HPgTPC



Parameter	Value	Notes
Bore	6.725m	Reduction possible with HPgTPC and ECAL optimization
Length	7.788m	Cryostat length
Max OD	7.85m	Cryostat diameter at stiffening rings
Central field	0.5T	
Field uniformity	$\pm 10\%$	
Ramp time to full field	30 min	
Stray field		

Magnet System: Partial Yoke

- The iron yoke minimizes the stray field and provides the support for the end seals of the pressure containment
 - "Stayed" flat heads
- ~ 750t

