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KEYNOTE3: High Field Magnets and Multifaceted Applications

Wednesday, August 30, 2023 5:30 PM (2 hours)

CHAired by Vinicius Njaim Duarte (PPPL, Princeton, USA)

This keynote will review three main facets of the High Field Magnet technology, were indeed they are essential:

- 1) Application to the future colliders under study: the muon colliders and the high energy hadron colliders
- 2) Application to MRI (the highest field magnet for MRI is the one developed at Saclay CEA for NEUROSPIN, 11.7 Tesla)
- 3) Application to Fusion.

The synergy and common interest in this technology leads to an active and worldwide R&D.

Speaker: Pierre Vadrine is a renowned Accelerator Physicist, the Head of the Division on Accelerators, Cryogenics and Magnets, DACM, at the Institute of Research in the Fundamental Laws of the Universe, IRFU, at the Commissariat of Atomic Energy CEA in France.

His many expertise and achievements include Accelerator Physics in some of the main worldwide projects e.g. development of novel magnets such as the toroidal field magnet equipping the muon detector system of ATLAS or the 4 Tesla magnet of CMS, the developments of magnets for a number of worldwide accelerators currently running e.g. LHC in development HL-LHC or in project (Linear electron positron, circular high energy electron collider, etc..). He launched and built the high field, 11.7 Teslas for the new MRI at NEUROSPIN, currently the world record highest MRI field magnet. He started his career at the JET and carry on with his Division the development on new high field magnets especially the High temperature magnets with application to Nuclear Fusion as well as high energy accelerators in project.

Presenter: VEDRINE, Pierre (Université Paris-Saclay (FR))