



Contribution ID: 1189

Type: Parallel Talk

Worldwide industrial developments for compact accelerators based on the Nb₃Sn superconducting radiofrequency (SRF) technology.

Thursday, 7 July 2022 15:30 (15 minutes)

Nb₃Sn superconducting radiofrequency (SRF) cavities have the potential to expand new performance capabilities of particle accelerators for the benefit of both the fundamental science and the industrial applications, where potential applications among others include wastewater treatment and medical isotope production. For small-scale applications, Nb₃Sn SRF creates the opportunity for a turn-key cryocooler operation instead of complex sub-atmospheric liquid helium cryogenic plants. The transition from cryogenic plant to a cryocooler operation reduces the footprint of the system, and substantially simplifies its operation and maintenance. With continued progress in the material development, Nb₃Sn cavities have the potential to further reduce cryogenic losses and to eventually outperform current state-of-the-art niobium in energy gain by a significant margin. Small scale accelerators based on Nb₃Sn are now moving towards the prototyping stage. We will discuss ongoing efforts towards the demonstration of Nb₃Sn cryomodules.

In-person participation

Yes

Primary author: GRIGORY, Eremeev (Fermilab)**Presenter:** GRIGORY, Eremeev (Fermilab)**Session Classification:** Technology and Industrial Applications**Track Classification:** Technology Applications and Industrial Applications