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## **Wed-Af-Po3.15-01 [5]: Ongoing Manufacturing of the EuCARD2 Roebel-based cos-theta magnet at CEA Saclay**

*Wednesday, 25 September 2019 14:00 (2 hours)*

In the framework of the FP7 EuCARD2 project, CEA Saclay developed a cos-theta insert magnet, wound with REBCO high temperature superconductor Roebel cable. Each dipole coil consists of a single arched layer of conductors, insulated with a glass fiber sleeve and impregnated with epoxy resin for mechanical reinforcement. Tooling has been developed to carefully guide the Roebel cable during the winding phase, transfer the coil to the impregnation mold and impregnate it. The magnet is made of two coils assembled around a Nitronic® 40 hollow core to mechanically limit its ovalization when operating in a 13 T background field. The structure is completed by the addition of an external stainless steel tube surrounding the coils. The paper details the validation of the whole fabrication procedure by using a stainless steel dummy Roebel cable and relates about the fabrication of the superconducting coils and the magnet assembly. The tests of the magnet in standalone configuration are foreseen for the end of this year in INFN-LASA test facility.

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