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Tests in Standalone Mode of the EuCARD 5.4-T REBCO Dipole Magnet.

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A HTS insert dipole magnet made of REBCO tapes was fabricated at CEA Saclay in 2016. The design of the insert was produced in the framework of the EuCARD High Field Magnet program and its fabrication was continued within a collaboration agreement between CEA-Saclay and Cern. The goal of the HTS insert project is to assess the potential of HTS material to generate a magnetic field of 5.4 T at 4.2 K in the 13 T background field of the 100-mm aperture FRESKA2 Nb₃Sn dipole magnet. The insert winding is made of three double-layer racetrack coils, wound from 12 mm wide YBCO tapes stabilized with beryllium copper ribbons. Prior to being installed in the aperture of FRESKA2, at CERN, the insert will be tested in standalone at both 77 K and 4.2 K at CEA-Saclay. After a recall of the insert design and main parameters, this paper will report on insert manufacturing and on the cold tests results in standalone.

Submitters Country

France

Primary authors: DURANTE, Maria; BORGNOLUTTI, Franck (CEA); BOUZIAT, Denis (CEA Saclay); Mr GHELLER, Jean-Marc (CEA Saclay); MOLINIE, Frederic (DAPNIA); DE ANTONI, Philippe (CEA Saclay)

Presenter: DURANTE, Maria

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