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Status of HFM development at CIEMAT

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CIEMAT is contributing to HFM Programme by means of common coil magnets. ISAAC is the first step, a model magnet made using existing RMC coils produced by CERN. Mechanics is based on a low preload concept. As a second step, we have explored the space design of common coil magnets providing 14 T in a 50 mm aperture at 1.9 K. We have found very promising results for hybrid magnets using Nb₃Sn and NbTi coils. DAISY will be our first common coil magnet demonstrator. We propose not featuring accelerator field quality, but addressing the mechanics of a hybrid magnet. In the future, we would target a hybrid common coil magnet performing accelerator field quality. CIEMAT is finishing the commissioning of SMART-Lab, a new facility for the development of high field magnet prototypes up to 2.5 m long and 10 tons.

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