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GBI: magnetic measurement bench controlled by laser interferometer

One electromagnetic undulator (HU640) has been constructed to cover the VUV spectral range of the SOLEIL synchrotron. HU640 has been especially designed to produce polarized photons 5 eV -40 eV. It is composed of 16 periods of 640 mm generating up to 0.1 T in both transverse direction B_x and B_z . The field is produced by three sets of pure coils installed in a special arrangement. One set of coils is dedicated to generate the horizontal component B_x . Two other sets, shifted the one from the other

by a quarter of period along the ID axis produce the vertical component B_z with a possible continuous translation varying from \pm half a period without any carriage motion. In the frame of the measurement of HU640, a special device has been developed and constructed by the SOLEIL teams. The bench is equipped with a carriage

moving inside a 12 meter guiding tube along the axis of the undulator. Both local and integral measurements are achieved by either 2D Hall probes or translated coils.

The position of the sensors are known by means of a laser interferometer allowing to

trigger on flight measurements. In this paper we present the design of the bench and

the preliminary magnetic measurements of the undulator

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