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## Developments on the S2C2 mapping system

*Friday, 11 May 2012 11:30 (20 minutes)*

A new mapping system for the Super Conducting Synchro Cyclotron (S2C2) was developed at IBA. One of the major differences with existing mapping systems at IBA is the replacement of the Hall probe by a search coil. In the S2C2, the field ranges from 4.6 to 5.7 T and large field gradients exist in the extraction region (the regenerator). These gradients should be measured with high precision in order to ensure proper extraction from the machine. The search coil was tested and calibrated in the S2C2, which was equipped with resistive coils, resulting in a field range from 0.8 to 2.2 T. Due to the non-point like nature of the search coil, corrections have to be applied to the measured field profile. To assess the validity of these corrections, field profiles measured with a Hall probe (point-like) and the search coil were compared. In addition, field errors due to misalignment of the search coil with respect to the median plane were simulated. The mechanical layout of the mapping system will be described together with the measurement sequence. The latter aims at minimizing errors due to drifting integrator offsets which might fake a contribution to first harmonic errors in the machine.

### **Please indicate preferred presentation (poster or talk?)**

poster

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