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Fabrication and Test of Nb₃Sn Racetrack Coils at High Field

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A program based on exploring the benefits of racetrack coil designs for utilization of brittle superconductors to achieve high fields is underway at LBNL. As an intermediate step in the experimental program, a set of Nb₃Sn racetrack coils, using state-of-the-art conductor, have been built and tested. The coils were configured to maximize the field, providing a means to study the effects of stress on conductor performance. In addition, several design improvements were added which will be implemented in the next step of the program; construction of a racetrack dipole with a field of 14 Tesla. An evaluation of the design modifications and test results are given.