

## Bending Effects on Critical Currents of Nb<sub>3</sub>Sn Superconducting Wires

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**Abstract** - Bending effects on Nb<sub>3</sub>Sn wires have been investigated to understand the critical current degradation of large Nb<sub>3</sub>Sn superconducting cables. An integrated model taking into accounts the neutral axis shift, the current transfer length, the mechanical filament breakage and the uniaxial strain release due to applying bending has been developed. Five different Nb<sub>3</sub>Sn wires, developed by the ITER parties, were tested. The experimental data are presented and analyzed with a newly developed integrated model. The current transfer effect shows to be an important factor.

**Keywords** - Bending strain, neutral axis shift, current transfer, filament breakage, Nb<sub>3</sub>Sn superconductor.

IEEE/CSC & ESAS EUROPEAN SUPERCONDUCTIVITY NEWS FORUM (ESNF), No. 10, October 2009  
Published in *AIP Conference Proceedings* 1219, pp. 239-246 (2010)