Field and Strain Dependence of the Critical Current and the *n*-value for Nb_3Sn Strand

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Detailed field and strain dependence of the critical current and the *n*-value for an internal-tin processed Nb_3Sn strand have been measured. Both the compressive and tensile strain is applied reversibly using Walter spiral probe made of BeCu up to 0.73 %. There is a correlation between the critical current and the *n*-value for the Nb_3Sn strand studied in this work and the field dependence of the *n*-value is in agreement with a recent empirical formula. It was further shown that the critical current can be reasonably well fitted by the scaling law based on strong-coupling theory of superconductivity using the relation between the critical current and the *n*-value

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