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## **Thu-Mo-Po4.05-07 [37]: Impact of Axial Tensile Strain on the Inhomogeneity of Critical Current for Bi-2212 Round Wire**

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Bi<sub>2</sub>Sr<sub>2</sub>CaCu<sub>2</sub>O<sub>x</sub> has excellent electromagnetic properties under high magnetic field, and can be made into isotropic round wire (RW) form. Therefore, it is easy to use cabling technology to make them as cable in conduit conductor (CICC) for the next fusion reactors. However, the Bi-2212 phase is a ceramic structure and sensitive to strain. In application, Bi-2212 RW will be affected by thermal stress and electromagnetic stress. It may cause the local damage of the wire and then affect the inhomogeneity of the critical current. The inhomogeneity of critical current in Bi-2212 RW is one of the factors affecting the performance of the superconducting magnet. In this paper, we investigate the impact of axial tensile strain on the inhomogeneity of critical current for Bi-2212 RW by a hall sensor array system. The distribution of the perpendicular component of the remanent field in the direction along the RW radial after tension is measured by a Hall sensor array. The local critical current of the RW is calculated through the method of calibration and the inhomogeneity of the critical current is described by Weibull statistical method. The results show that when the axial tensile strain exceeds the irreversible strain limit, the inhomogeneity of critical current for Bi-2212 RW increases significantly.

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