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## **Thu-Mo-Po4.05-08 [38]: Non-destructive evaluation of the critical current for Bi-2212 cable for fusion application**

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High-temperature superconducting material of Bi-2212 ( $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_x$ ) is considered to be used in the next generation of fusion reactors such as China Fusion Engineering Test Reactor (CFETR) due to extremely high critical current density as well as high critical field at low temperature. The critical current as well as its inhomogeneity is one of the important factors to evaluate the performance of the Bi-2212 wire, cable and conduct, and also it is important for the design of the superconducting magnet system. Commonly, the critical current is detected by four-probe method (electric method). The electric method, however, has its limitations, such as without the local characteristics and the need of large current source. In this work, non-destructive evaluation (NDE) by using Hall sensor array, a magnetic method, will be used for testing local critical current of Bi-2212 cable. NDE is more effective and faster method for testing local critical current of high temperature superconductor compared with conventional electrical method.

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