Contribution ID: **1110** Type: **Regular 15 minutes Oral Presentation**

Influence of field cycle and applied current on coated conductor magentization and decay for accelerator applications

Wednesday 30 August 2017 11:15 (15 minutes)

Coated conductors are now being considered for use in beam steering and focusing magnets for high energy particle accelerators. However, coated conductors and cables have substantial magnetization, important for field quality. Magnetization decay, although suppressed, is also important for field quality retention. In this work we investigate the influence of applied current and selected field cycle on magnetization and magnetization decay for YBCO coated conductors at low temperatures. Field cycles mimicking what would be experienced for accelerators were applied to the samples, including (1) starting a a high field, (2) dropping to a field between 0-1 T, and (3) increasing again to a field of 1 T. The magnetization and magnetization decay were measured as a function of the lower field point, and it was seen that while M could be suppressed with a conductor-specific lower field, time dependence (decay) was only partially reduced. Additionally, current of 0-100 A were applied and the influence of the magnetization for fields applied perpendicular to the tape surface were mapped as a function of lower field hold point and injected current.

Submitters Country

usa

Primary authors: SUMPTION, Mike (The Ohio State University); MYERS, Cory (Ohio State University); Prof. COLLINGS, Ted (MSE, The Ohio State University)

Presenter: SUMPTION, Mike (The Ohio State University)

Session Classification: Wed-Mo-Or21

Track Classification: F4 - ReBCO Wires and Cables