



Contribution ID: 353

Type: **Poster**

C2Po1F-08: High accuracy resistivity and temperature coefficient measurements of Invar from 4 to 300 K

Tuesday 11 July 2023 09:15 (1h 45m)

The temperature coefficient of resistivity is a critical element of many AC-based hot-wire measurements of thermal properties. At cryogenic temperatures, most metallic materials suitable for wire and film-based forms have either a temperature coefficient or absolute resistivity that is too small to enable practical, accurate measurements. Invar (36% Ni 64% Fe) controlled thermal expansion alloy has a significant temperature coefficient of resistance while also maintaining significant absolute resistivity at cryogenic temperatures, and so has seen some use in low temperature 3-omega measurements. Prior data on the temperature coefficient of resistivity of invar is limited and the uncertainty is high. In this work, we present high-accuracy resistance and temperature coefficient data for this material from 4-300K.

Authors: HAMILTON, Ben (MIT); ADAMS, Jacob (Massachusetts Institute of Technology)

Co-author: BRISSON, John (MIT)

Presenters: HAMILTON, Ben (MIT); ADAMS, Jacob (Massachusetts Institute of Technology)

Session Classification: C2Po1F: Miscellaneous I