The Electrical Aspects of the choice of Former in a High T-c Superconducting Power Cable
- DTU Orbit (04/03/2019)

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Centrally located in a superconducting power cable the former supplies a rigid means onto which to wind the superconducting tapes and enables a continuous supply of cooling power via a flow of liquid cryogen through it. Therefore, the choice of former has a broad impact on the construction and design of a cable. The diameter of the former determines the overall diameter of the total cable, influences the heat loss to the ambient and enters into the total AC-losses. Depending on whether the former is made of a good or poor electrical conductor eddy currents in the former itself may also contribute significantly to the AC-loss of the cable; the choice between an open and a closed former determines how and where the pressure load (pressurized coolant) has to be accommodated. In this work the electrical impact of the choice of material and diameter of the former on the AC-loss of a cable conductor is addressed.

General information
State: Published
Organisations: Department of Electric Power Engineering
Contributors: Däumling, M., Kühl (fratrådt), A. V. D. A., Olsen, S. K., Træholt, C., Tønnesen, O.
Pages: 766-769
Publication date: 1999
Peer-reviewed: Yes

Publication information
Journal: IEEE Transactions on Applied Superconductivity
Volume: 9
Issue number: 2
ISSN (Print): 1051-8223
Ratings:
BFI (2019): BFI-level 1
Web of Science (2019): Indexed yes
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.45 SJR 0.408 SNIP 0.962
Web of Science (2017): Impact factor 1.288
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.42 SJR 0.398 SNIP 1.145
Web of Science (2016): Impact factor 1.583
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.27 SJR 0.403 SNIP 1.06
Web of Science (2015): Impact factor 1.092
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 0.83 SJR 0.478 SNIP 1.13
Web of Science (2014): Impact factor 1.235
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.32 SJR 0.443 SNIP 1.156
Web of Science (2013): Impact factor 1.324
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.11 SJR 0.555 SNIP 1.274
Web of Science (2012): Impact factor 1.199
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.16 SJR 0.368 SNIP 1.062
Web of Science (2011): Impact factor 1.041
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.473 SNIP 1.065
Web of Science (2010): Impact factor 1.035
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.447 SNIP 1.021
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.884 SNIP 0.981
Scopus rating (2007): SJR 0.629 SNIP 1.093
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.734 SNIP 1.05
Scopus rating (2005): SJR 0.652 SNIP 0.992
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.882 SNIP 0.904
Scopus rating (2003): SJR 0.51 SNIP 1.054
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.226 SNIP 1.024
Scopus rating (2001): SJR 0.552 SNIP 1.368
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.498 SNIP 0.998
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.054 SNIP 2.065
Original language: English
DOIs:
10.1109/77.783407
Source: orbit
Source-ID: 172722
Research output: Research - peer-review › Conference article – Annual report year: 1999