

Title

Brush Sliding Contact Voltage Deviation Analysis based on the Evaluation of Displacement Excited Vibration caused by Collector Ring Profile Distortion for Turbine Generators & Traction Motors

Author

Makoto Takanezawa (Nippon Institute of Technology)
Hiroyuki Yanagisawa (Nippon Institute of Technology)
Takahiro Ueno (Nippon Institute of Technology)
Noboru Morita (Nippon Institute of Technology)
Toru Otaka (Toshiba Corporation)
Daisuke Hiramatsu (Toshiba Corporation)

- 1) Nippon Institute of Technology
- 2) Postal Address : 4-1 Gakuendai Miyashiro-cho Minamisaitama-gun Saitama Prefecture , 345-8501 , Japan
- 3) Electronic Address : m.takanezawa@gmail.com
ueno@nit.ac.jp
morita@nit.ac.jp
- 4) Phone : +81-480-33-7651
- 5) Fax : +81-480-33-7680

- 6) Toshiba Corporation
- 7) Postal Address : 2-4 Suehiro-cho Tsurumi-ku Yokohama 230-0045 , Japan
- 8) Phone : +81-45-510-5691
- 9) Electronic Address : +81-45-500-1407

Abstract

When commutator profile distortion in DC motors or collector ring profile distortion in AC generators or motors are caused, stabilities and reliabilities of sliding contact phenomena will be lost, causing mechanical contact instabilities and contact voltage instabilities. In this paper, how to estimate the mechanical vibration out of the ring profile distortion and how to estimate contact voltage deviation out of the mechanical vibration, are introduced.

Keyword

Sliding Contact, Contact Voltage Drop, Brush Pressure, Ring Profile