

# Correlation between Arcing Phenomena and Electromagnetic Noise of Opening Electric Contacts

**Yasuo Ebara, Hideaki Sone, Yoshiaki Nemoto**

Graduate School of Information Sciences, Tohoku University

## **Abstract**

The authors observed the electromagnetic noise and surface change for Cu-C electric contact as a simulation model of a commutator motor. In case of Cu (anode)-C(cathode), the duration of sporadic burst noise generates from arc discharge. The patterns of the burst noise at the start of arc are classified into three types, and the pattern of surface change correspond to each patterns. When duration of burst noise become longer, melted area has wide distribution on electrodes surfaces and the authors have found the correlation between burst noise and the surface area of electrode. From these results, the authors proposed the method of noise control by controlling the melted area and showed a fundamental technique of noise control by the design of electrode in consideration of electrode form.