

DOI: <https://doi.org/10.15407/techne2017.01.029>

## PHYSICAL MODELING OF ELECTRICAL PHYSICAL PROCESSES AT LONG AIR GAPS BREAKDOWN

Journal	Tekhnichna elektrodynamika
Publisher	Institute of Electrodynamics National Academy of Science of Ukraine
ISSN	1607-7970 (print), 2218-1903 (online)
Issue	No 1, 2017 (January/February)
Pages	29 – 34

### Authors

**M.M. Rezinkina<sup>1</sup>, O.L. Rezinkin<sup>2</sup>, A.R. Danyliuk<sup>2</sup>, V.I. Revuckiy<sup>2</sup>, A.N. Guchenko<sup>2</sup>**

<sup>1</sup> – State Institution "Institute of Technical Problems of Magnetism of the National Academy of Sciences of Ukraine",

Industrialna st., 19, Kharkiv, 61106, Ukraine,

e-mail: Rezinkina@nas.gov.ua.

<sup>1</sup> – National Technical University "Kharkiv Polytechnic Institute",

Frunze st., 21, Kharkiv, 61002, Ukraine

### Abstract

*The results of physical modeling of the influence of corona discharge intensity at the grounded objects tips on the probability of their strokes by high-voltage discharges in the long air gaps "high voltage rod –rod on the grounded plane" are presented. The system consisting of a vertical high-voltage negative electrode rod, simulating the lightning channel leader, and two grounded rods, simulating lightning rods (one with a spherical and the second with a pointed tip) has been investigated. Before application of the high voltage impulse up to 1 MV to the*

*high-voltage electrode, the pre-breakdown DC electric field (EF) was applied to the electrode system. The experiments have shown that corona presence at the pointed electrode tip increases probability of being struck by high-voltage discharges at application of the DC electrical field strength, which is of the same order as the impulse EF strength. References 11, figures 2, table 2.*

**Key words:** physical modeling, electrical physical processes, the probability of hitting by high-voltage discharges, corona current, lightning.

Received: 08.09.2016

Accepted: 16.12.2016

Published: 19.01.2017

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