

## Reactor like TGE model

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Terrestrial gamma flash (TGF) and thunderstorm ground enhancements (TGE) phenomena are crucial for understanding of atmosphere breakdown and lightning generation physics. The initial theory was developed by Gurevich and included only runaway breakdown description. It was later updated by Babich and Dwyer, but even updated model uses a rather simplified field structure and does not fully match observed quantities.

The reactor like TGE (RL-TGE) model presented in this work assumes more complicated stochastic field structure and takes into account not only one cell runaway breakdown, but the whole global cell structure in the thundercloud. It allows to describe a wide variety of TGF-like events and potentially fills the gap in thundercloud parameters previously unaccounted by other theories.

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