Contribution ID: **26**                                                Type: **Session Talk**

# Penrose effect for charged particles in charged Vaidya spacetime

*Tuesday, 11 October 2022 17:35 (25 minutes)*

Penrose process states that due to collision or decay there might be particles with negative energy in the ergosphere of a rotating black hole. Recently, the analogue of this process has been found for charged particles in Reissner-Nordstrom spacetime.

In this work the Penrose process is considered for charged particles in charged Vaidya spacetime. This metric is dynamical one with mass and charge are being functions of time. We use conformal Killing vector to specify the mass and charge functions in order to transform the metric to the static coordinates. We define the generalized ergosphere for charged particles with negative energy and investigate the properties of such particles. Finally, we compare results with ones obtained for Reissner-Nordstrom spacetime.

**Primary author:**    VERTOGRADOV, Vitalii (Herzen State Pedagogical University of Russia)

**Presenter:**    VERTOGRADOV, Vitalii (Herzen State Pedagogical University of Russia)

**Session Classification:**    Section D

**Track Classification:**    Section D: Gravitation and cosmology