The 5th international conference on particle physics and astrophysics



Contribution ID : 683

Type : Oral talk

Triboelectric effect in radio detectors of astrophysical experiments in Antarctica

Tuesday, 6 October 2020 17:40 (15)

Astrophysical experiments in Antarctica use radio detection of cosmic rays and neutrinos. Radio waves are produced via the Askaryan effect from neutrino-induced cascades in the South Pole ice. In this work, the triboelectric effect as a possible source of background for such neutrino experiments is studied. The friction on the ice surface during high wind may result in static discharge, which causes the emission of radio waves. The results of correlations between wind speed and event rate are represented here. The data used were from the RICE experiment (2002-2010) and the AURA experiment (2010), including an analysis of radio signals that were detected during times of high winds. The location of sources is also discussed.

 Primary author(s):
 Ms. MIKHAILOVA, Maria; БЕССОН, Дэвид (NRNU MEPhI)

 Presenter(s):
 Ms. MIKHAILOVA, Maria; БЕССОН, Дэвид (NRNU MEPhI)

 Session Classification:
 Astroparticle Physics

Track Classification : Astroparticle physics