Geophysical Research Abstracts
Vol. 21, EGU2019-1668, 2019
EGU General Assembly 2019

Radon222 as an additional source of atmospheres ionization in simulations of the chemical-climate model SOCOLv2

Kseniia Golubenko
Saint-Petersburg State University, Earths Physics Department, Saint-Petersburg, Russian Federation (golubksen@yandex.ru)

The radioactive isotope Radon222 has a half-life of 3.8 days and can stay suspended in the air and transported over relatively large distances. Radon222 was added and incorporated into the chemical-climate model (CCM) SOCOLv2 as an additional source of atmospheres ionization for studing of the impact of GEC through variability of conductivity on climate. The radon concentration in the atmosphere depends on the transport and not solely defined by its emissions. In this paper, we would like to present the first results of introduction the radon ionization to CCM SOCOLv2 and comparison of our results with the results of global models ECHAM5 and WACCM. According to the model, the radon-related ionization reaches its maxima near the surface, where the Radon222 concentration is enhanced. Over the high latitudes, the ionization rates are not so strong because the Radon222 sources are weaker over the surfaces covered by ice and snow.