**Doses to Antarctic biota**

**K. M. Szufa,1 Jerzy W. Mietelski,2 and M. A. Olech 3,4**

1. Institute of Physics, Jan Dlugosz University in Czestochowa, Armii Krajowej 13/15, 42-200, Czestochowa, Poland
2. Institute of Nuclear Physics, Polish Academy of Sciences, Radzikowskiego 152, 31-342 Kraków, Poland
3. Institute of Botany, Jagiellonian University, Gronostajowa 3, 30-387, Kraków, Poland
4. Institute of Biochemistry and Biophysics, Department of Antarctic Biology, Polish Academy of Sciences, Pawińskiego 5a, 02-109, Warszawa, Poland

\**k.szufa@ujd.edu.pl* *corresponding/presenting author*

Antarctic is a unique place in the world due to isolation by Antarctic Circumpolar Current and harsh climatic condition. Domestic ecosystems are not very diverse; Antarctic terrestrial flora consists of mosses, lichens and view grass species only. Thus study of the relatively low numbers of Antarctic species can provide information on the state of the entire ecosystem.

Numerous studies show that radioactive global fallout and SNAP-9A (accident of American satellite with nuclear power system) are sources of artificial radioactivity in Antarctic environment. In this work we present not only radioactivity level in Antarctic organisms but also dosimetrical interpretation. More than 100 biological samples were analyzed. Using low background gamma spectrometry (HPGe spectrometers), liquid scintillation counter and alpha spectrometry 137Cs, 90Sr, 238,240+239Pu and 241Am activity concentration in the Antarctic organisms were determined. Doses to biota, both terrestrial and marine, due to internal exposure to 238,240+239Pu, 241Am, 90Sr and 137Cs were calculated using ERICA Tool software. The results obtained revealed significant differences in radionuclide accumulation between species in terrestrial and marine ecosystems. The attempt to select some indicator organism was also done.