



## **Cs-137 surface concentrations surveyed in 2002 across the Atlantic – western Antarctic waters**

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The latitudinal distribution of  $^{137}\text{Cs}$  in the Atlantic – western Antarctic surface waters was studied during the 7<sup>th</sup> Ukrainian Antarctic Expedition in January-May 2002. The  $^{137}\text{Cs}$  concentrations have been also measured in the upper ice of the coastal glacier Woozle Hill located near the Ukrainian Antarctic station “Akademik Vernadsky” (western Antarctica, 65°15' S - 64°16' W). Comparison of these data with results of previous same-route expeditions SWEDARP (Swedish Antarctic Research Expedition, 1988/1989) and of French R/V “Jeanne d’Arc” (1992/1993), has shown practically parallel changes of  $^{137}\text{Cs}$  surface concentrations between 40° N and 20° S, pointing to decrease of  $^{137}\text{Cs}$  radioactivity at these latitudes with an apparent half-life of 10-15 years ( $12.5 \pm 2.1$  years on average). This suggests that decrease of  $^{137}\text{Cs}$  surface concentration within this latitude band is controlled, besides the radioactive decay of  $^{137}\text{Cs}$  (half-life = 30 years), by vertical mixing of the upper water masses. South of 20°S, the  $^{137}\text{Cs}$  concentrations in surface water have decreased more rapidly because of the influence of the less contaminated Antarctic waters. At 50-60° S and near the Antarctic coast, the  $^{137}\text{Cs}$  activity in 2002 was similar to those measured during the SWEDARP and “Jeanne d’Arc” expeditions, suggesting an additional input of  $^{137}\text{Cs}$  to these waters from the melted ice from the adjacent glaciers.