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## Use of cosmogenic radionuclides $^{14}\text{C}$ and $^{10}\text{Be}$ to verify empirically reconstructed cosmic ray modulation since 1616

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Here we present a new semi-empirical model describing modulation of galactic cosmic rays in the heliosphere. The model is an update of the previous similar model by Alanko-Huotari et al. (2006) and considers such heliospheric parameters as open solar magnetic flux, heliospheric current sheet tilt angle and the large scale solar magnetic field polarity. The model has been tested and calibrated for the period 1976 - 2013 including the very weak solar activity minimum in 2008-2010. Based on this model, and on different reconstructions of the open solar flux, the heliospheric modulation potential is reconstructed since 1610, and subsequently used to compute the production and distribution of cosmogenic radionuclides, such as  $^{10}\text{Be}$  and  $^{14}\text{C}$ . The modelled values are compared with archives from ice cores and tree rings confirming the validity of our model.

### Collaboration

– not specified –

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**Author:** ASVESTARI, Eleanna (University of Oulu)**Co-authors:** KOVALTSOV, Gennady (Ioffe Physical-Technical Institute, St. Petersburg, Russia); USOSKIN, Ilya (University of Oulu)**Presenter:** ASVESTARI, Eleanna (University of Oulu)**Session Classification:** Poster 3 SH**Track Classification:** SH-EX