Cite abstracts as **Author(s) (2006), Title, *Eos Trans. AGU,* *87*(52), Fall Meet. Suppl., Abstract xxxxx-xx**

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HR: 0800h
AN: **T11A-0425**
TI: iCronus : A Computational Tool for Cosmogenic Nuclide Dating
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AB: iCronus is a freely available tool to estimate landform ages using cosmogenic nuclide techniques. It is a Web application built on top of a platform independent scripting language, allowing it to be hosted on a wide range of computing platforms and accessed by users using standards-compliant Web browsers. The iCronus project intends to create a publicly accessible website that contains published samples, modules, and workflows that can be downloaded and used by other users of the iCronus prototype. This will facilitate a managed approach for the sharing of information between different research groups performing work on cosmogenic nuclide techniques. For a sample with assumed tectonic and erosional history the sensitivity of calculated age to these processes can be determined. A future version of iCronus will also incorporate effects due to an assumed climatic history. For a particular sample iCronus is capable of calculating exposure ages using either averaging or discretization of time dependent processes and features such as geomagnetic field and atmospheric changes. Different scalings relating to atmospheric attenuation, solar variability and geomagnetic dependence are incorporated with a calibration technique included to generate baseline production rates of independently dated samples. For a sample with AMS-determined cosmogenic nuclide inventory iCronus calculates sample ages by determining past changes in geomagnetic inclination and intensity, sea level and tectonically induced changes in sample elevation. From these values long term changes in cosmogenic nuclide production rates due to variations in the attenuation of cosmic rays through the atmosphere and geomagnetic field are computed. Procedures for samples spanning a wide range of tectonic and erosion histories will be presented.
DE: 1150 Cosmogenic-nuclide exposure dating (4918)
DE: 5415 Erosion and weathering
DE: 5475 Tectonics (8149)
SC: Tectonophysics [T]
MN: 2006 Fall Meeting