



CRONUS-EU cosmic ray produced nuclide systematics - The European contribution

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The objective of the CRONUS-EU is to advance Terrestrial cosmogenic nuclide (TCN) techniques into an accurate and robust tool for Earth surface and environmental sciences. CRONUS-EU aims to achieve this goal via:

- (1) High quality calibration of TCN production rates at independently dated surfaces
- (2) High quality calibration of TCN production rates using artificial targets
- (3) Systematic cross calibration of production rates of different TCNs
- (4) Refinement of scaling factors that describe the spatial and temporal variation of the cosmic ray flux relevant for TCN production using calibration measurements and numerical modeling from physical principles
- (5) Reducing the uncertainty of decay constants
- (6) Establishing the use of additional mineral phases in exposure age dating
- (7) Improvement and standardization of chemical routines
- (8) Laboratory cross calibrations
- (9) Training of young researchers and the user community

The effort necessary to achieve above goal is significant even for the strong network teams in CRONUS-EU. To strengthen our effort and to achieve international evaluation and acceptance, we are seeking close collaboration with CRONUS-Earth, the parallel-running northern American sister initiative that obtained funding through

NSF. Formal links between the two initiatives are established and each consortium will address complementary aspects to achieve the common goal.

The coordination of CRONUS-EU is at the VU Amsterdam, with network teams at SUERC, Scotland; CEREGE and CRPG, France; ETH-Zürich (2 teams), Switzerland; Univ. Bratislava, Slovakia; Univ. Hannover, TU-Munich and GFZ-Potsdam, Germany; and Utrecht University, The Netherlands (www.cronus-eu.net).

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