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Cosmogenic nuclides - Calibration sites for 36Cl on Fuerteventura, Canary Islands, Spain

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Cosmogenic nuclides are a promising tool of investigating the time span rocks have been exposed to cosmic radiation. Exposure dating has been applied in many geoscientific fields such as volcanology, (glacial) tectonics, structural geology and geomorphology. However, there is still major disagreement in determination of scaling factors and production rates for the cosmonuclides. Due to geographic position and presence of basaltic lava flows this island was chosen by CRONUS-EU to serve as a 36Cl calibration site. Young basalts from Fuerteventura are analysed to better constrain scaling factors and production rate. Preparation and measurement methods for 36Cl determination are implemented as a dating method for rocks of relatively little exposure age. The geohistoric intensity and orientation of the Earth magnetic field based on paleomagnetic data is tested in a time/intensity sequencing approach to improve the scaling factors based on magnetic parameters. External control of the values of production rates and ages of the basalts from Fuerteventura may be provided by petrological and geochemical analyses: differentiation signatures of the magma can probably offer an estimate of relative eruption ages of the basalts.