Fading characteristics of martian analogue materials and the applicability of a correction procedure

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The anomalous fading of trapped charge in martian analogue materials such as basalt and andesite rock samples is measured. Optically stimulated luminescence (OSL) signals show rapid fading (of between 4% and 27% per decade). Fading rates obtained using high temperature thermoluminescence signals are smaller. The importance of knowing whether a standard fading correction method is applicable to samples of unknown age is illustrated by application to an 'infinitely old' known-age basalt, for which both the uncorrected and fading-corrected natural signals lie within the approximately linear region of the growth curve. (C) 2008 Elsevier Ltd. All rights reserved.

General information
Publication status: Published
Organisations: Radiation Physics, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Aarhus University
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Pages: 672-678
Publication date: 2008
Peer-reviewed: Yes

Publication Information
Journal: Radiation Measurements
Volume: 43
Issue number: 2-6
ISSN (Print): 1350-4487
Ratings:
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.628 SNIP 1.215
Web of Science (2008): Indexed yes
Original language: English
DOIs:
10.1016/j.radmeas.2008.02.019
Source: orbit
Source-ID: 223414
Research output: Contribution to journal › Journal article – Annual report year: 2008 › Research › peer-review