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Muonography in Geoecology

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Muonography is an innovative method for investigating the internal structure of massive natural and industrial objects using fluxes of high-energy atmospheric muons. Its range of applications is broad, extending from mineral exploration to the assessment of natural and man-made risks to civil infrastructure. In geology and geophysics, it serves as a promising tool that complements traditional approaches and acts as an independent experimental method for forecasting seismic and volcanic processes, as well as for assessing deformation in fault, landslide, and karst zones. The paper presents the first geoecological experiment conducted at Mount Bytkha (Sochi), involving the modeling and optimization of detectors to identify zones of fracturing.

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