

Measurement of changes in wall surface morphology in Yoshimi-Hyakuana cave by terrestrial laser scanning

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Detection and quantitative evaluation of changes in surface morphology of rocks are crucial issue for the understanding of processes of weathering. Using terrestrial laser scanning (TLS) approach, detailed topographic measurements of wall surface morphology were performed repeatedly at a test site of Yoshimi-Hyakuana cave in Saitama Prefecture, central Japan. Time series of point clouds and digital elevation models (DEMs) were compared to each other, revealing the locations of centimeter-scale changes in the wall surface, likely induced by salt weathering. The spatial distribution of such surficial changes will be further assessed by continuous measurements, with appropriate accuracy assessments.

Keywords: TLS, weathering, point cloud, digital elevation model