

## Physical and mechanical properties for damage assesment of Taya Cave rocks, central Japan

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Taya cave, an artificial cave in a hill in south Yokohama, was excavated from the Kamakura period through the late Edo period. There are many sculptures and bas-reliefs on the surface of the cave wall made of soft rock which deposited in Pleistocene. Those sculptures has been suffering from weathering and deterioration, especially exfoliation of the wall and ceiling. In this study, for the purpose of conservation and restoration of sculptural murals, rock physical properties were investigated to assess the current situation. As a result, the possibility of surface exfoliation is considered to be affected by moisture difference, whereas the possibility of collapse of ceilings or floors between stairs becomes higher if too much water infiltrate.

Keywords: Phisical property, Mechanical property, Taya Cave