

## GPR surveys on tunnel walls of a sericite deposit

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Ground penetrating radar (GPR) surveys were carried out on tunnel walls of the Furikusa sericite deposit, Aichi, Central Japan. The high-quality sericite veins, which were generated by the hydrothermal alterations due to andesite dike intrusions, were distributed along the dikes. It is difficult to discover the new veins by tunnel digging, because the width of the veins is generally several meters or less. The purpose of this study was to test and confirm applicability of the GPR technique to the sericite exploration in the tunnels. The GPR measurements were performed along the tunnel walls where the precious resistivity and induced polarization (IP) surveys were done. The used instrument was MGPR-10 with 400 M Hz antenna. The GPR profiles obtained imaged reflectors corresponding to sericite veins that were estimated from the resistivity and IP surveys. Moreover, the pattern of the GPR images suggested the existence of fractures and hydrothermal alteration zones that reduced bedrock strength, and loosened zones which were probably produced by rock excavation. These results indicate the GPR technique is a valuable tool for mapping veins and fractures in the rock mass in detail and investigating metal and clay resources in mine tunnels.