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## Development of Tunnel Displacement Measurement by 3D Laser Scanner

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In the mountain tunnel, tunnel displacements have been measured using a three-dimensional measurement system to evaluate for the behavior of the ground near the face. However it is difficult to grasp the three dimensional behavior of the ground.

3D laser scanner can measure in detail the shape of the tunnel wall. Therefore, in recent years, 3D laser scanner has been used for progress control of working form. This paper describes the study of tunnel displacement measurement system by 3D laser scanner.