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THREE-DIMENSIONAL CHARACTERISTICS of THE LOESS'S MICROSTRUCTURE and COMPARISON BEFORE and AFTER COLLAPSE

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Microstructure surface undulation is an important parameter to denote the loess microstructure characteristics, but the current studies are mostly qualitative and quantitative two-dimensional analysis, which difficult to reflect the situation of soil microstructure surface undulation. Analysis based on the microstructure characteristics of loess in western Liaoning, translate the gray value which extracted from SEM image into the elevation data of loess microstructure surface, constitute the three-dimensional digital images of Loess's microstructure surface undulation before and after collapse, proposing SEM photographs three-dimensional visualization method and characterization parameters. This method is simple to implement, and can intuitively observe the structure of the Loess's microstructure surface undulation before and after collapse. Through improved projective covering method, calculate the loess's fractal dimension before collapse is 2.508, but 2.590 after collapse, this shows that loess after collapse, microstructure surface undulation extent is increased, and pore complexity extent significant increased.