



A preliminary study on the simulation application of failure process for reinforced soil walls through discrete element method

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This study combines the scientific methods of digital elevation model and UAV, as well as of the damage characteristics of reinforced wall and the damage process of the reinforcement structure through simulate. The failure of the reinforcement structure caused by rainfall. It is not only the failure of settlement depth and bearing strength, but also the main cause of damage caused by internal damage factors of reinforced wall. The failure process of reinforced wall is simulated reinforced structure for landfills by using the discrete element method, including the type of geosynthetic-reinforced soil (GRS) composition of the type and physical experimental simulation. And then, the study used UAV, LiDAR, and RTK survey methods to compare/adjustment the simulation results, and monitoring large slope terrain evolution process in study area. During the simulation and terrain survey, considering the different types of soil properties, composite material, structural external factors and construction processes, landfill structure with reinforced wall strength disability and prediction to the wall damage results, and add a new verification method for geotechnical engineering technology.

Keywords: reinforced wall, discrete element method, UAV, GRS, rainfall