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Discrete Element Modeling on Bearing Capacity Problems

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Abstract : In this paper, the classical bearing capacity problem is re-considered from discrete element analysis. In the discrete element approach, the bearing capacity problem is considered from the elastic stage to plastic stage to rupture stage (large displacement). The bearing capacity failure mechanism of a strip footing on soil is investigated, and the influence of micro-parameters on the bearing capacity of soil is also observed. It is found that the distinct element method (DEM) gives very good visualized results, and basically coincides well with that derived by the classical methods.

Keywords : bearing capacity, distinct element method, failure mechanism, large displacement
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