## An Algorithm for the Coupling of BEM and DDA

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Discontinuous Deformation Analysis (DDA) is widely used in rock mechanics. It is a type of discrete element method but accounts for the interaction of independent blocks along discontinuities in fractured and jointed rock masses. Based on a stepwise approach, DDA provides a convenient tool to solve for the large displacements that accompany discontinuous movements between blocks. However, the blocks are assumed to be simply deformable, which results in that the strain and stress in a block is constant. On the other hand, Boundary Element Method (BEM) is a very efficient tool to analyze the internal strain and stress of a domain since BEM only requires the discretization of the domain's boundary. Therefore, in this paper, an algorithm is proposed to incorporate BEM into 2-dimensional DDA to calculate the internal stress and strain of a rock block after its motion and the contact forces at its vertexes are determined.

Keywords: Coupling, BEM, DDA