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The combined binary tree-direct evidence contact detection algorithm for discrete elements in 2-D

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SUMMARY

In this paper a novel contact detection algorithm for discrete elements is proposed. The algorithm comprises coordinate based space cell decomposition, direct evidence contact detection approach and binary tree.

The algorithm enables various shapes and formulations of target objects to be applied. One possible application is to use a so called contact element to describe the boundary of target object. In that case contact detection for discrete elements of general shape (for both loose and dense packing of discrete elements) can be performed by proposed algorithm.