

## Optimization of Position of Circular Hole in Rectangular Plate through MLS based Overset Method along with Genetic Algorithm

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### Summary

In optimization, it is often required to alter the size of structures or the position of sub-structures. Therefore it is necessary to carry out the remodel the updated configuration of structures, and re-meshing procedure may be one of the easiest ways to re-model the updated configuration. However, this approach is time-consuming, and has limitation in handling the hexahedral or quadrilateral meshes. To attenuate these disadvantages in optimization procedure, newly proposed MLS based overset method has been utilized along with the genetic algorithm in this work. The overset structural analysis method can reflect the effect of updated configuration efficiently. To test the validity of the proposed method, optimization of position of circular hole in the rectangular plate has been carried out.

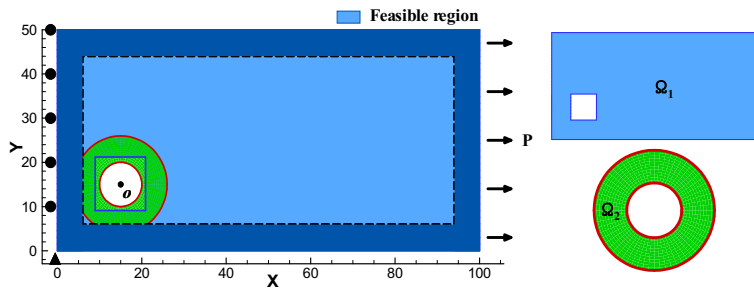


Figure 1: Initial design of whole structure and substructures

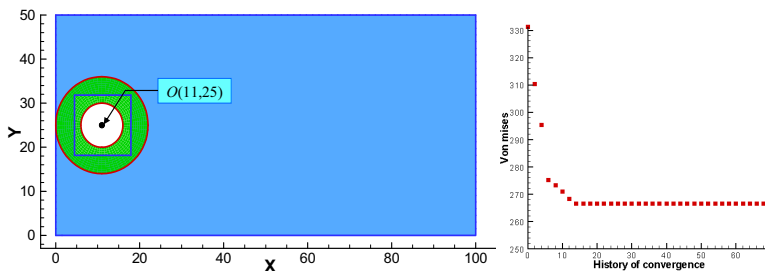


Figure 2: Optimum design and convergence history

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