

Manual of the matlab scripts of `FEM_to_FD`

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This is a program that builds a Finite element mesh out of a finite difference mesh.

1 Main features of the scripts

If we have a finite difference mesh, sometimes we would like to have it used for a finite element program. The problem in doing that is that we would like not to open any straits and not closing any straits. The program `FEM_to_FD` do just that. In the middle of the ocean the strategy is very simple: we simply split squares in two. But near the coast this strategy cannot be implemented simply. We have to add additional points in order to respect the straits and isthmus. But the number of added point is minimal.

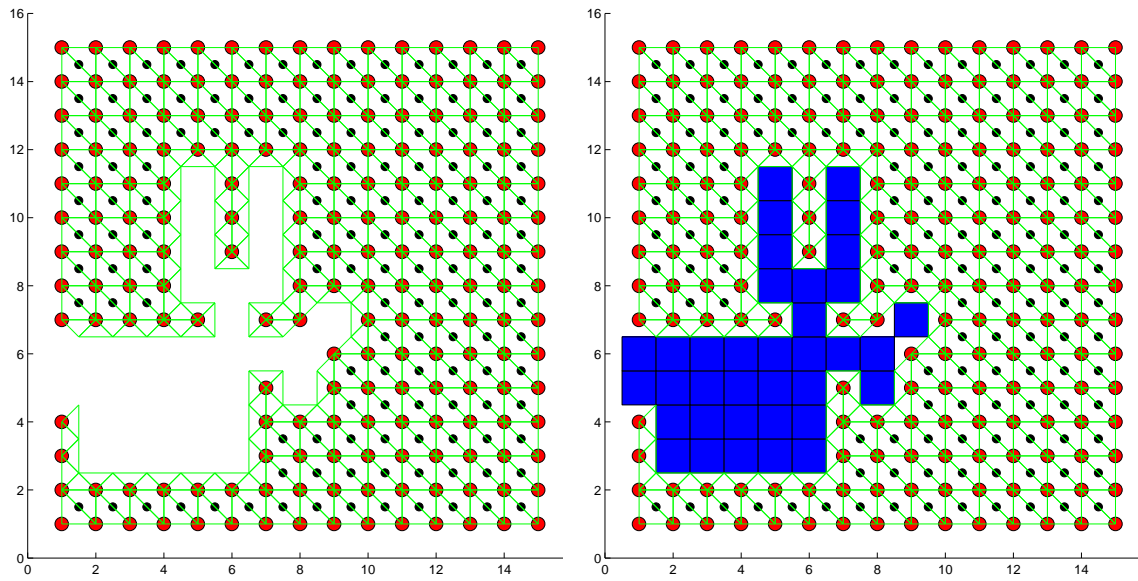


Figure 1: An example of FEM mesh obtained from a FD mesh