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Robust algorithm for the intersection of simplices

For some applications it is commonplace to use multiple grids in a single finite element solver. For example, in fluid-structure coupling a grid for the structure can be used separate from the grid for the fluid. This may occur as a 2D interface or, in the case of 3D mortar methods, the intersection of tetrahedral meshes. It is then essential to be able to project between simplicial meshes as robustly as possible. This talk presents an intersection algorithm designed to do just that between two simplicial grids in general dimension, making use of the principle of parsimony, with a focus on 2D and 3D grids.