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"*A p-Harmonic Descent Approach for Shape Optimization*"

Within the talk a method for the implementation of shape optimization in fluid dynamics applications is presented. We propose to use the shape derivative to determine deformation fields by solving the p-Laplacian boundary value problem for p > 2. The approach is closely related to the computation of the steepest descent direction of the shape funktional. The idea of our approach is demonstrated for shape optimization related to drag-minimial free floating bodies. Our new approach is compared to existing procedures with respect to convergence of the optimization algorithm, the obtained shape, and also with respect to the quality of the computational grid after large deformations.

Comments:

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