

# Continuation applied to Shape Optimization

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In this presentation, we propose a homotopy method for shape optimization. Newton's method provides quadratic convergence if the initial guess is close enough. However, a good initial guess is just available in rare cases. Here, we connect solution of a given we want to the solution to an "easier" problem. The idea is to follow this path until, we reach the desired solution. We follow the path using a predictor corrector algorithm. Finally, we use the predictor corrector method in shape optimization and provide a numerical example.

## References:

[1] <https://arxiv.org/abs/2405.03421>

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