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Second order finite-difference ghost-point multigrid methods for elliptic problems with discontinuous coefficients on an arbitrary interface

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Highlights

- A finite-difference ghost-point method to solve elliptic equations with discontinuous coefficients in complex geometries is proposed.
- The method is second order accurate in both the solution and its gradient.
- The accuracy is not affected by high jumps in the coefficients.
- A proper geometric multigrid approach is presented, whose efficiency (convergence factor) does not depend on the amplitude of the jump in the coefficient.

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