



A high order HDG method for curved-interface problems

Patrick Vega*

CI²MA and Departamento de Ingeniería Matemática
Universidad de Concepción
Concepción, Chile

Abstract

We generalize the technique developed in [2] to elliptic problems with mixed boundary conditions and elliptic interface problems involving a non-polygonal interface. We study first the treatment of the Neumann boundary data since it is crucial to understand the applicability of the technique to curved interfaces. We provide numerical results showing that, in order to obtain optimal high order convergence, it is desirable to construct the computational domain by interpolating the boundary/interface using piecewise linear segments. In this case the distance of the computational domain to the exact boundary is only $\mathcal{O}(h^2)$.

Joint work with:

Weifeng Qiu¹, Department of Mathematics, City University of Hong Kong, Hong Kong, China.

Manuel Solano², CI²MA and Departamento de Ingeniería Matemática, Universidad de Concepción, Concepción, Chile.

References

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*Partially supported by Scholarship Program of CONICYT-Chile, e-mail: pvega@ing-mat.udec.cl

¹Partially supported by the GRF of Hong Kong (Grant No. 9041980 and 9042081) and a grant from the Research Grants Council of the Hong Kong Special Administrative Region, China (Project No. CityU 11302014), e-mail: weifeqiu@cityu.edu.hk

²Partially supported by CONICYT-Chile through grant FONDECYT-11130350, BASAL project CMM, Universidad de Chile and Centro de Investigación en Ingeniería Matemática (CI²MA), e-mail: msolano@ing-mat.udec.cl