SEMINARIO DE ANÁLISIS NUMÉRICO Y MODELACIÓN MATEMÁTICA

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Título de la Charla:

On the robustness of a hybridizable discontinuous Galerkin method for curved domains

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Resumen

We present a technique for numerically solving Dirichlet boundary-value problems in domains with curved boundary. The technique consists in approximating the domain by polyhedral subdomains where a hybridizable discontinuous Galerkin (HDG) method is used to solve for the approximate solution. The approximation is then suitably extended to the remaining part of the domain. This approach allows for the use of only polyhedral elements and there is no need of fitting the boundary in order to obtain an accurate approximation of the solution. Optimal error estimates are obtained. Moreover we numerically explore the robustness of the method with respect to distance between the boundary and the computational domain.