## A non-symmetric coupling of Boundary Elements with the Hybridizable Discontinuous Galerkin method

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## Abstract

We propose and analyze a new coupling procedure for the Hybridizable Discontinuous Galerkin Method with Galerkin Boundary Element Methods based on a double layer potential representation of the exterior component of the solution of a transmission problem. We show a discrete uniform coercivity estimate for the non-symmetric bilinear form and prove optimal convergence estimates for all the variables, as well as superconvergence for some of the discrete fields. Some numerical experiments support the theoretical findings.

**Keywords:** Hybridizable discontinuous||Galerkin||Boundary elements||Coupling **Creado:** Sábado, 21 de Noviembre, 2020