

Stable coupling of finite and boundary element methods

Olaf Steinbach¹

We prove in the case of a Lipschitz interface the stability of the coupling of finite and boundary element methods when the direct boundary integral equation with single and double layer potentials is used only. In particular we prove an ellipticity estimate of the coupled bilinear form. Hence we can use standard arguments to derive stability and error estimates for the Galerkin discretization for all pairs of finite and boundary element trial spaces.

¹ TU Graz, Institut für Numerische Mathematik, Steyrergasse 30, 8010 Graz, Austria,
o.steinbach@tugraz.at