

**Meeting:** 1005, Newark, Delaware, SS 2A, Special Session on Singular Analysis and Spectral Theory of Partial Differential Equations

1005-35-137            **Constantin Bacuta\*** (bacuta@math.udel.edu), Mathematical Sciences, University of Delaware, Newark, DE 19716, and **James H. Bramble** and **Joseph E. Pasciak**. *Regularity Estimates for the Biharmonic Problem*.

We consider the biharmonic Dirichlet problem on a polygonal domain. Regularity estimates in terms of Sobolev norms of fractional order are proved. The analysis is based on subspace interpolation theory. We apply our results to establish regularity estimates for the Stokes system and the Dirichlet plane elasticity system on polygonal domains. (Received February 04, 2005)