1030-35-327   **Svitlana Mayboroda*** (`svitlana@math.ohio-state.edu`), Department of Mathematics, The Ohio State University, 231 W 18th Avenue, Columbus, OH 43210, and **Vladimir Maz'ya**. *The Green function estimates and Wiener's test for the biharmonic equation.* Preliminary report.

In this work we establish the pointwise estimates on the second mixed derivatives of the Green function, the kernel of the Green potential for the biharmonic equation with Dirichlet boundary data.

As a result, we prove boundedness of the gradient of a biharmonic function in an arbitrary three-dimensional domain and obtain an analogue of Wiener's test governing the continuity of the gradient of a solution to the Dirichlet problem. (Received August 06, 2007)