1108-35-505   **Giles Auchmuty** and **Manki Cho*** (`realmann@math.uh.edu`). *Boundary Integrals and Approximation of Harmonic Functions.*

Steklov expansions for a harmonic function on a rectangle are analyzed. The value of a harmonic function at the center of a rectangle is shown to be well approximated by the mean value of the function on the boundary plus a very small number (often 3 or fewer) of additional boundary integrals. Similar approximations are found for the central values of solutions of Robin and Neumann boundary value problems. These results are based on finding explicit expressions for the Steklov eigenvalues and eignfunctions. This is joint work with Professor Giles Auchmuty. (Received January 20, 2015)