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Ryan Alvarado* (rjalvarado@amherst.edu). *On the Dirichlet problem with boundary datum belonging to Hardy spaces in the upper-half space.*

The primary focus of this talk concerns the solvability of the Dirichlet problem for elliptic, second-order, homogeneous $M \times M$ systems with constant, complex coefficients in the upper-half space \mathbb{R}_+^n , with boundary datum belonging to the Hardy Space $H^p(\mathbb{R}^{n-1})$, $p \in (\frac{n-1}{n}, 1]$. It turns out that the solution can be expressed in terms of a convolution between the S. Agmon, A. Douglis, and L. Nirenberg Poisson kernel for the given system and the boundary data from the corresponding Hardy space. A key tool in establishing nontangential maximal estimates for the solution constructed in this manner is a certain new, general criterion guaranteeing boundedness in H^p of linear operators. The presented work is in collaboration with Marius Mitrea. (Received September 12, 2019)