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**Mihalis Mourgoglou\*** (mmbqb@mail.missouri.edu), Mathematics Department, 21 Math Sciences Bldg, University of Missouri, Columbia, MO 65211.  *$C^\alpha$  and BMO solvability of Dirichlet problem for divergence form elliptic equations with complex  $L^\infty$  coefficients.*

We consider divergence form elliptic equations  $Lu := \nabla \cdot (A\nabla u) = 0$  in the half space  $\mathbb{R}_+^{n+1} := \{(x, t) \in \mathbb{R}^n \times (0, \infty)\}$ , whose coefficient matrix  $A$  is complex elliptic, bounded and measurable. In addition, we suppose that  $A$  satisfies some additional regularity in the direction transverse to the boundary, namely that the discrepancy  $A(x, t) - A(x, 0)$  satisfies a Carleson measure condition of Fefferman-Kenig-Pipher type, with small Carleson norm. Under these conditions, we obtain solvability of the Dirichlet problem for  $L$ , with data in either  $BMO$  or in the space of Hölder continuous functions  $C^\alpha$  with  $\alpha$  small enough, assuming that we have the same solvability result for the  $t$ -independent operator  $L_0 := \nabla \cdot (A(\cdot, 0)\nabla)$ . (Received September 21, 2010)