1030-32-134 **Sönmez Şahutoğlu*** (sonmez@umich.edu), University of Michigan, Department of Mathematics, Ann Arbor, MI 48109. *Boundary smoothness and irregularity of the $\overline{\partial}$-Neumann problem.*

It is an observation due to J.J. Kohn that for a smooth bounded pseudoconvex domain Ω in $\mathbb{C}^n$ there exists $s > 0$ such that the $\overline{\partial}$-Neumann operator on Ω maps $W^s_{(0,1)}(\Omega)$ (the space of $(0,1)$-forms with coefficient functions in L^2-Sobolev space of order s) into itself continuously. We show that this conclusion does not hold without the smoothness assumption by constructing a bounded pseudoconvex domain Ω in $\mathbb{C}^2$, smooth except at one point, whose $\overline{\partial}$-Neumann operator is not bounded on $W^s_{(0,1)}(\Omega)$ for any $s > 0$. (Received July 28, 2007)