1116-32-672 **R. Michael Range*** (range@albany.edu). *A pointwise a-priori estimate for the $\overline{\partial}-$Neumann problem on weakly pseudoconvex domains.*

We discuss *pointwise* a-priori estimates for the $\overline{\partial}-$Neumann problem on an *arbitrary* weakly pseudoconvex domain D in $\mathbb{C}^n$. Such estimates provide an analogon of the classical basic estimate in the L^2 theory that has been the starting point for all major work in this area involving L^2 and Sobolev norm estimates for the complex Neumann and related operators. In particular, it is shown that for $(0,q)$ forms f in the domain of the adjoint $\overline{\partial}^*$ of $\overline{\partial}$, for any coefficient f_J of f the pointwise growth of $\overline{\partial} f_J$ is controlled by the sum of the suprema of f, $\overline{\partial} f$, and $\overline{\partial}^* f$ over D multiplied with $dist(z, bD)^{-1+\delta}$, for any $\delta < 1/2$. These results generalize known estimates from the *strictly* pseudoconvex case to general weakly pseudoconvex domains. The proofs utilize the new non-holomorphic Cauchy-Fantappié kernels recently introduced by the author (Math. Ann. **356** (2013), 793–808) that reflect the complex geometry of the boundary of D. (Received September 10, 2015)