1030-32-205 **Jae-Seong Cho*** (`cho1@math.purdue.edu`) and **David Catlin** (`catlin@math.purdue.edu`).
Sharp Estimates for the $\bar{\partial}$-Neumann Problem on Regular coordinate domains. Preliminary report.

We will discuss the best possible epsilon of subellipticiy for the special case of domains in $\mathbb{C}^{n+1}$ whose boundary defining functions are of the form

$$r(z, \bar{z}) = \operatorname{Re}(z_0) + \sum_{i=1}^{n} |f_i(z)|^2,$$

where $z = (z_0, \ldots, z_n)$ and f_i is a Weierstrass polynomial in z_i whose coefficients are depending on $(z_1, \ldots, z_{i-1})$.

To do so, we carefully analyze the behavior of the partial derivatives of $f_1, \ldots, f_n$ near the origin to construct for all sufficiently small δ a bounded smooth plurisubharmonic functions λ_δ whose Hessians are at least as large as $\delta^{-2\epsilon}$ on $\{-\delta < r < 0\}$. (Received August 02, 2007)