McNeal, Jeffery D.
Convex domains of finite type. (English) | Zbl 0777.31007 |
J. Funct. Anal. 108, No. 2, 361-373 (1992).

Let $\Omega \subset\subset \mathbb{C}^n$ be a smoothly bounded domain and $p \in \partial\Omega$. Let p have a neighbourhood U in which Ω is convex. Suppose that the line type of p is $L < \infty$. The author proves that for each $z \in \Omega \cap U$, there exists a uniformly bounded C^∞-plurisubharmonic function on Ω with maximally large Hessian on a polydisc $P_\delta(z)$. As a consequence, it is deduced that the variety type of p is also finite and equals L. This corollary is also known to Fornaess-Sibony and Boas-Straube by different methods.

Reviewer: V.Anandam (Riyadh)

MSC:

31C10	Pluriharmonic and plurisubharmonic functions
32A10	Holomorphic functions of several complex variables

Cited in **2** Reviews
Cited in **42** Documents

Keywords:

type of a boundary point; variety type

Full Text: DOI

References:

[1] {\scH. Boas and E. Straube}, On the equality of line type and variety type of real hyper-surfaces in C^{\textit{n}}, preprint. · Zbl 0749.32009

[2] Catlin, D.W, Necessary conditions for subellipticity of the $ \$t6-Neumann problem, Ann. of math. (2), 117, 147-171, (1983) · Zbl 0552.32017

[3] Chen, J.-H, Estimates of the invariant metrics on convex domains, ()

[4] D'Angelo, J.P, Real hypersurfaces, orders of contact, and applications, Ann. of math. (2), 115, 615-637, (1982) · Zbl 0488.32008

[5] {\scJ. E. Fornæss}, personal communication.

[6] Fefferman, C; Kohn, J.J, Hölder estimates on domains of complex dimension two and on three dimensional CR manifolds, Adv. math., 69, 233-303, (1988) · Zbl 0649.35068

[7] Fornæss, J.E; Sibony, N, Construction of P.S.H. functions on weakly pseudoconvex domains, Duke math. J., 58, 633-655, (1989) · Zbl 0679.32017