

**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  $\Omega$  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  $C^\infty$ -plurisubharmonic function on  $\Omega$  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 Fornæss-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] [H. Boas and E. Straube](#), On the equality of line type and variety type of real hyper-surfaces in  $\mathbb{C}^n$ , preprint. · [Zbl 0749.32009](#)
- [2] [D.W. Catlin](#), Necessary conditions for subellipticity of the  $\bar{\partial}$ -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] [J. 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](#)

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.