Ark. Mat., **32** (1994), 455–473
© 1994 by Institut Mittag-Leffler. All rights reserved

Characterization of removable sets in strongly pseudoconvex boundaries

Guido Lupacciolu

I. Introduction

Let M be a complex-analytic manifold(1) of complex dimension $n \geq 2$.

Given an open domain $D \subset\subset M$, a proper closed subset K of the boundary bD of D is called *removable* in case $bD \setminus K$ is $\mathcal{C}^1$-smooth and every continuous CR-function f on $bD \setminus K$ has a continuous extension F to $\overline{D} \setminus K$ which is holomorphic on D.

A general account of the subject of removable sets is given in [19], where one can also find most of the related references.

One main result in this area is the following characterization of removable sets in the two-dimensional case (see [19; II.10]):

Theorem 0. *Let M be a Stein manifold of dimension two and $D \subset\subset M$ a $\mathcal{C}^2$-bounded strongly pseudoconvex domain such that $\overline{D}$ is $\mathcal{O}(M)$-convex. Then for a proper closed subset K of bD the following two conditions are equivalent*:

(*a*) *K is removable*;

(*b*) *K is $\mathcal{O}(M)$-convex.*

This connection, in dimension two, between removability and $\mathcal{O}(M)$-convexity is of considerable interest, and has been recently used by Forstnerič and Stout [6] to exhibit some new instances of polynomially convex sets in $\mathbf{C}^2$.

On the other hand, Theorem 0 does not hold for general $n \geq 2$ (it being only true, for $n \geq 3$, that $(b) \Rightarrow (a)$) and a result of this kind valid for $n \geq 2$ seems to be still unknown, due perhaps to the fact that the known proof of Theorem 0 depends on a version of a theorem of Słodkowski [18; Theorem 2.1] on two-dimensional

(1) Throughout the paper manifolds are assumed to be connected and with countable topology.