

HOLOMORPHICS FUNCTIONS

TAKING VALUES IN QUOTIENTS OF FRECHET b-SPACES

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Abstract. *We define two spaces of holomorphic function taking values in a quotient bornological space, and we establish a sufficient condition under which these two spaces coincide.*

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1. Introduction and notations

To establish a version of Bartle and Graves Theorem for approximatively surjective mappings between b-spaces, we introduced in [2], what we called the class of Fréchet b-spaces. In fact, we observed that the boundedness of a Fréchet space has a property that a general bornology does not have and we said that a b-space E is a Fréchet b-space if for all sequences of bounded subsets $(B_n)_n$ of E , there exists a sequence of positive real numbers $(\lambda_n)_n$ such that $\cup_n \lambda_n B_n$ is bounded in E .

If U is an open connected subset of \mathbb{C}^n and $E | F$ is a quotient bornological space, we let $O(U, E | F) \simeq O(U, E) | O(U, F)$ be a space of holomorphic function taking values in a quotient bornological space $E | F$. We define a space of holomorphic function taking values in a quotient bornological space $E | F$ as the space $O_1(U, E | F) = \varprojlim_V O(V, E | F)$ where V ranges over the relatively compact open subsets of U . The objective of this paper is to show that if $E | F$ is a quotient bornological space such that E and F are Fréchet b-spaces, then $O_1(U, E | F) \simeq O(U, E) | O(U, F)$.

Also, we consider the space of holomorphic functions near to a compact set X defined by $O([X]) \simeq \varprojlim_U O(U)$ where U is a neighbourhood of X (see for example