CONTINUOUS HOMOMORPHISMS
BETWEEN TOPOLOGICAL ALGEBRAS
OF HOLOMORPHIC GERMS

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ABSTRACT. We study τ_w-continuous homomorphisms on algebras of holomorphic germs. In this setting we give conditions for these homomorphisms to be composition operators. We also present equivalent conditions for the above homomorphisms to be Montel or reflexive.

1. Introduction. Let E be a Banach space, U an open subset of E and $\mathcal{H}(U)$ the space of all holomorphic functions on U. A holomorphic germ on a compact subset K of E is an equivalence class determined in the set of all holomorphic functions on open neighborhoods of K by the relation, $f \cong g$ if f and g coincide on an open neighborhood of K. We will denote by $\mathcal{H}(K)$ the algebra of all holomorphic germs on K. The natural topology on spaces of holomorphic germs is the Nachbin ported topology τ_w. It is defined on $H(U)$ by the family of all semi-norms ported by the compact subsets of U. A semi-norm p on $H(U)$ is ported by the compact subset L of U if for every open subset V, $L \subset V \subset U$, there is a $c > 0$ such that $p(f) \leq c\|f\|_V = c\sup_{x \in V}|f(x)|$ for every $f \in H(U)$.

Now, the topology τ_w on $\mathcal{H}(K)$ is the locally convex topology defined by the inductive limit of the spaces $(H(U), \tau_w)$, where U varies over all open neighborhoods of K. We remark that the space $(\mathcal{H}(K), \tau_w)$ can be represented as an inductive limit of Banach spaces, namely the inductive limit of the spaces $H^\infty(U)$, where $H^\infty(U)$ denotes the Banach space of all bounded holomorphic functions on U. We are interested in the study of continuous homomorphisms between locally m-convex algebras of holomorphic germs. The continuous homomorphisms between topological algebras of holomophic functions have been extensively studied lately. For example see [**4–6**]. In [**16**] Nicodemi has