HARTE THEOREM FOR WAELBROECK ALGEBRAS

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Abstract

Let B be a locally convex Waelbroeck algebra. Let $a_1, \ldots, a_k \in B$ be an arbitrary k-tuple of mutually commuting elements. The joint spectrum $\sigma_B(a_1, \ldots, a_k)$ is defined as the set of those $(\lambda_1, \ldots, \lambda_k) \in \mathbb{C}^k$ for which the elements $a_1 - \lambda_1, \ldots, a_k - \lambda_k$ generate a proper (left or right) ideal. Let $p : \mathbb{C}^k \to \mathbb{C}^m$ be a polynomial mapping. The spectral mapping formula

$$p(\sigma_B(a_1, \ldots, a_k)) = \sigma_B(p(a_1, \ldots, a_k))$$

is proved.