

ON A NEW PRODUCT-TYPE OPERATOR ON THE UNIT BALL

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Abstract. Let $m \in \mathbb{N}$, u_j , $j = \overline{1, m}$, be holomorphic functions on the open unit ball $\mathbb{B} \subset \mathbb{C}^n$, φ be a holomorphic self-map of \mathbb{B} , and D_l be the partial derivative operator in the l th variable $l \in \{1, 2, \dots, n\}$. We introduce here the following polynomial differentiation composition operator

$$P_{D, \varphi}^m f := \sum_{j=1}^m u_j C_\varphi D_{l_j} \cdots D_{l_1} f$$

and give some necessary and sufficient conditions for the boundedness and compactness of the operator from the logarithmic Bloch spaces to weighted-type spaces of holomorphic functions on \mathbb{B} .

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