Abstract: Poletsky-Stessin Hardy spaces, defined in [2], are the natural generalizations of Hardy spaces on hyperconvex domains and the Cauchy-Fantappie projections are the $n$-dimensional analogs of Cauchy integral of the one variable theory. In the first part of this talk we will consider the boundedness and compactness properties of Cauchy-Fantappie-type projections on Poletsky-Stessin Hardy spaces $H^p_0(\mathbb{B}^p)$ of complex ellipsoids. We show that the boundedness and compactness of these operators can be characterized through the conditions known as Carleson conditions. This characterization enables us to relate the PS-Hardy spaces generated by an arbitrary exhaustion function $\varphi$ to the $H^p_0(\mathbb{B}^p)$ for which we have a better understanding. In the second part of the talk, we will mention Grothendieck-Köthe-da Silva duality for the spaces of holomorphic functions defined in a convex domain and then using a general characterization of dual complements of Reinhardt domains by [1], we give the dual complement of some special type of complex ellipsoids. Moreover, we present a duality result for Poletsky-Stessin Hardy space of complex ellipsoid analogous to that of [1] on classical Hardy spaces.

References


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