Symmetric holomorphic functions

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This talk is based on preliminary work that Pablo Galindo and I have been doing, and is a somewhat distant offshoot of our 2003 joint work with Raymundo Alencar and Andriy Zagorodnyuk [1]. In this earlier paper, we were concerned with the algebra of all holomorphic functions f on ℓ_p-spaces with the property that for all $x \in \ell_p$, $f(x) = f(x_\sigma)$, where $\sigma : \mathbb{N} \to \mathbb{N}$ is an arbitrary permutation.

Here, our interest is in the following situation. Let $\mathcal{C}(K)$ be the space of continuous $\mathbb{K}-$valued functions on a compact Hausdorff space K. Consider the algebra $\mathcal{H}_s(\mathcal{C}(K))$ of all holomorphic functions $f : \mathcal{C}(K) \to \mathbb{C}$ such that for every $x \in \mathcal{C}(K)$ and every homeomorphism $\sigma : K \to K$, $f(x) = f(x \circ \sigma)$. We investigate this algebra, as well as the role of symmetric holomorphic functions. We plan to give some examples and to pose some open problems.

References

[1] R. L. Alencar, R. M. Aron, P. Galindo, and A. Zagorodnyuk, *Algebras of symmetric holomorphic functions on ℓ_p*, Bull. London Math. Soc. **35** (2003), no. 1, 55?-64.

Joint work with Pablo Galindo.