# STUDY OF SEVERAL POLYNOMIAL NORMS AND THE TOPOLOGIES INDUCED BY THEM

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ABSTRACT. In this talk we study several norms in the space $\mathcal{P}$ of the polynomials of arbitrary degree in the complex plane. In particular we consider the sup norm on the disk $\mathbb{D}_r := \{z \in \mathbb{C} : |z| \leq r\}$, namely $\| \cdot \|_{D_r}$, and the $\ell_1$-norm of the coefficients, $\|\cdot\|_1$. As a result of the study we derive the relationship existing among the topologies induced by those norms for several choices of $r$. This research has been conducted jointly with Luis Bernal González, Gustavo A. Muñoz Fernández and Juan B. Seoane Sepúlveda.