*Extensions of the classical Cesàro operator on Hardy spaces*

Guillermo Curbera
University of Sevilla, Spain

ABSTRACT

For each $1 \leq p < \infty$, the classical Cesàro operator $\mathcal{C}$ from the Hardy space $H^p$ to itself has the property that there exist analytic functions $f \notin H^p$ with $\mathcal{C}(f) \in H^p$. We discuss the (Banach) space $\mathcal{C}_{H^p}$ consisting of *all* analytic functions that $\mathcal{C}$ maps into $H^p$. It is shown that $\mathcal{C}_{H^p}$ contains classical Banach spaces $X$ of analytic functions, genuinely larger than the space $H^p$, such that the operator $\mathcal{C}$ has a continuous $H^p$-valued extension to $X$. An important feature of $\mathcal{C}_{H^p}$ is that it is the *largest* amongst all such spaces $X$.