Greedy approximation and basis behavior in Hardy spaces of Dirichlet series

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In this talk, we analyze the canonical basis of Hardy spaces of both ordinary and general Dirichlet series by looking at their fundamental functions—a key tool in the study of greedy approximation. We provide a complete description of the asymptotic growth of these functions in the classical setting. In the general case, the asymptotic behavior of the fundamental functions depends on the chosen frequency. We establish sharp upper and lower bounds for all possible behaviors and give full characterizations for a broad class of frequency sequences.

As a consequence, we show that the canonical basis fails to satisfy most classical greedy properties, except in the Hilbert space case.

This is a joint work with Daniel Carando and Leandro Milne.