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Catherine Beneteau* (cbenetea@usf.edu). *A survey of optimal approximants and connections to digital filter theory.* Preliminary report.

In this talk, I will discuss polynomials that approximate inverses of functions in analytic function spaces such as the Hardy, Bergman, and Dirichlet spaces. Various aspects of these polynomials have been studied over the last ten years in relation to their growth, zeros, and universality properties, among others. It turns out that these polynomials were also of interest in the 70s and 80s in the engineering literature in connection with the development of ideal digital filters. We will examine this connection and discuss some open problems. This work is joint with R. Centner. (Received September 08, 2020)