ACMS Applied Math Seminar

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Thursday, Oct. 15, 2026
154 Hurley Hall
2:30 PM – 3:30 PM

Greedy Rational Approximation: Generalizing AAA

The adaptive Antoulas-Anderson (AAA) algorithm, introduced in 2018, is a highly successful method for rational approximation in one real or complex variable, based on barycentric representation and greedy data selection. We will discuss two generalizations of this idea: to operator-valued functions, and to multivariate functions. For operator-valued functions, extra care must be taken to account for the interaction between the discretization of the operator and the rational approximation steps. For multivariate functions, there are additional choices in the polynomial basis used to represent the approximant; we will discuss a greedy method for basis growth that works alongside the greedy data selection. We will discuss several practical applications of these new approximation algorithms.