Adaptive Thiele Interpolation

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We show that the possible breakdown in classical Thiele continued fraction interpolation can be completely avoided by adopting a greedy strategy in the selection of the interpolation points.

We illustrate that this actually renders Thiele interpolation into a practical and competitive tool for univariate rational interpolation.

Particularly when also the poles and zeros can be calculated directly from the obtained coefficients by solving a generalised eigenvalue problem.

Examples include best approximations and comparisons with the AAA approach.