

Analysis and Applied Mathematics Seminar

Reliable Adaptive Algorithms for Integration, Interpolation and Optimization

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Abstract: Popular adaptive numerical algorithms aim to return an answer within the user's error tolerance with an appropriate amount of computational effort—harder problems require more effort and easier problems require less effort. The error estimates assumed by these adaptive algorithms often lack theoretical justification. This talk describes some of the pitfalls of these algorithms and our recent efforts to provide adaptive algorithms with rigorous guarantees. We focus on integration, interpolation and optimization problems.

Monday, October 5 at 4:00 PM in SEO 636