

Why and How to Compute Eigenvalues

Toward the end of a first course in linear algebra, students learn that matrices have these things called eigenvalues. If they are lucky, the students will even find out something about why eigenvalues (and eigenvectors) are important. They will certainly be taught how to compute eigenvalues, but the method that they will learn is “wrong!” It's wrong in the sense that it is inefficient and unstable, and it's not the way eigenvalues are computed in practice. This talk will present some “right” ways to do the job. It turns out that this is still an active research area, and I will at least briefly describe some recent work of myself and collaborators.

Prerequisite: A first course in linear algebra



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Professor Watkins is an internationally recognized expert in scientific computing, numerical analysis, and, especially, numerical linear algebra. He is the author of three books in the field and more than one hundred mathematical and scientific publications. With several co-authors he was honored recently by the award of a SIAM Outstanding Paper Prize for work in eigenvalue computations.

2019 HARRY KIEVAL LECTURE

WHEN
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10:30—11:30 am

WHERE
Taylor Hall
Room 28/31