

Matrix Computations and Scientific Computing Seminar

Organizer: J. Demmel and M. Gu

Wednesday, 12:10–1:00 pm, 380 Soda Hall

Sep 7 **Alberto Grunbaum**, UC Berkeley

Quantum walks and linear algebra over a ring

This is a talk with more questions than answers. I will try to show how the study of quantum walks (either conserving energy or including dissipation) give rise to linear algebra problems that may have appeared in other areas of mathematics, network theory, etc. I am looking for feedback from the audience.

One reference that gives some of the flavor (in the case of unitary-i.e. energy preserving- quantum walks) is

J. Bourgain, F.A. Grunbaum, L. Velazquez, J. Wilkening Quantum recurrence of a subspace and operator-valued Schur function, *Comm. Math Physics*, 329, 1031-1067 (2014)