



Pacific Institute *for the*
Mathematical Sciences

PIMS LUNCHBOX LECTURE

DR. CYNTHIA VINZANT

March 23, 2017
12:00 pm

University of Calgary
Downtown Campus

SOME NON-LINEAR ALGEBRA IN LINEAR ALGEBRA: MATRICES AND POLYNOMIALS

Dr. Cynthia Vinzant
(North Carolina State University)

Many fundamental objects in linear algebra have non-linear structure. The eigenvalues of a matrix are an important example. Another is collections of low-rank matrices, whose structure can be understood through algebraic notions like dimension and degree. I will discuss some of the beautiful algebraic and convex geometry appearing in matrix spaces, with a focus on those relevant for problems in optimization.

Cynthia Vinzant is an assistant professor at North Carolina State University. She received her PhD from UC Berkeley in 2011 under the supervision of Bernd Sturmfels, and went on to a postdoctoral position at the University of Michigan. Generally, Cynthia enjoys connections between algebra, combinatorics, and convexity. Her work involves the real algebraic structure of convex bodies (spectrahedra) and polynomials (real stable polynomials) arising in optimization and matrix theory.

WEBSITE & REGISTRATION: <http://www.pims.math.ca/industrial-event/170323-pllcv>
(A light lunch will be provided. Please RSVP)

