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“Measuring the eigenvalue braids & knots near higher-order exceptional points”

It may seem unlikely that rich mathematical structures still remain to be uncovered in small arrays of classical, linear oscillators. However, oscillators systems that include non-reciprocal elements and loss (or gain) have provided a number of surprises in recent years. My talk will describe how these systems are naturally connected to braid groups, knot theory, and other concepts from topology. I will give a pedagogical introduction to this topic (with lots of pictures!) and will present measurements of these phenomena in a cavity optomechanical system.