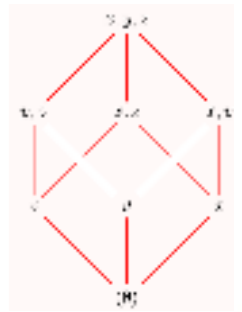
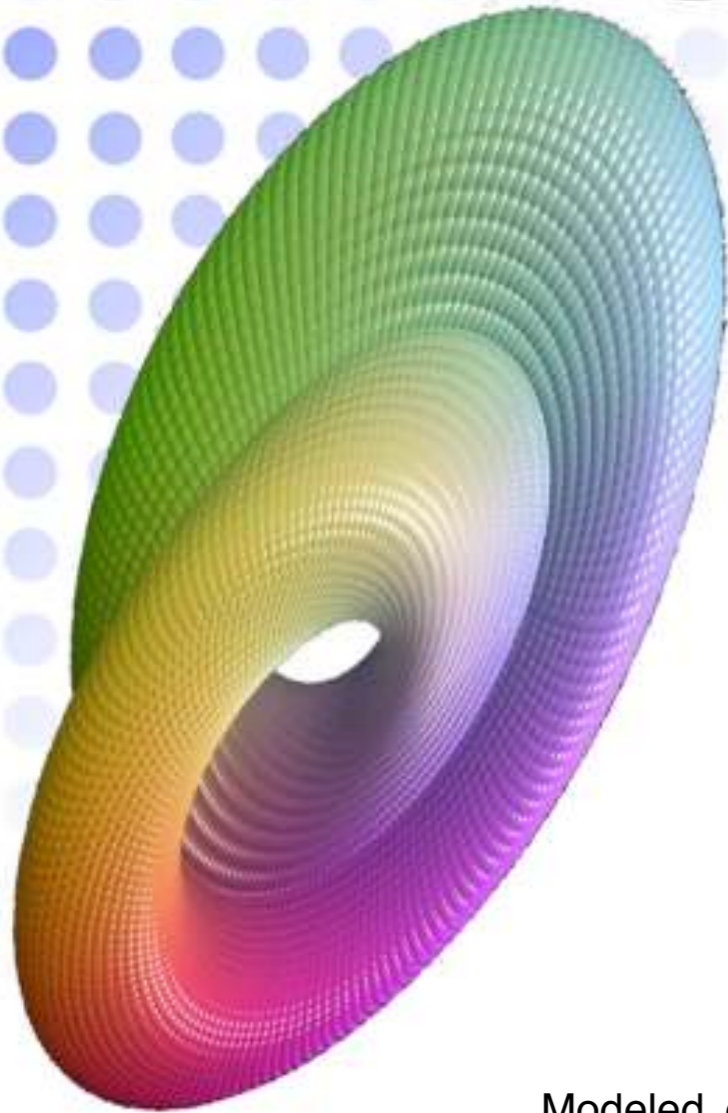


Michigan Math Club



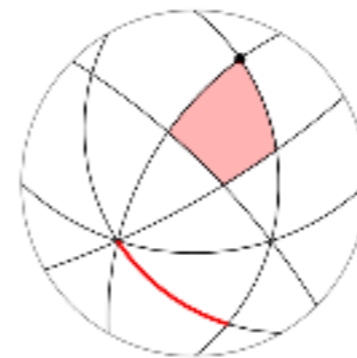
Thursday at 4pm in EH1360
Pizza + pop outside afterwards!!



Walkie-Talkie



Som Phene



02 February 2023



Modeled each morning at **6:05am** by the **Walking Club**, we begin a *random walk* on the *chamber of a hyperplane arrangement*. The special case of the *Bidigare-Hanlon-Rockmore random walk* as a *Markov chain* leads us to estimating mixing time for **Zingerman's Coffee**. This mixing time estimate inspired Vinzant et al, to do the same for a large *simplicial complex* hence estimating rapid mixing for *high dimensional expanders*. **Grateful for the Coffee!** On the walk back, the **discrete footsteps in snow** appear to **have melted** into a continuous track. Just as the discrete random walk leads to a continuous deterministic **return to campus**, the discrete story produces its continuous counterpart: generating polynomials for the simplicial complex. These give us the special class named *Lorentzian Polynomials*. **Hi!** We have run into a crossroad with alumni among others, **wishing a "Good Morning"** to Adiprasito, Huh and Katz! They crossed us on their way of proving *Hard Lefschetz Theorem* and *Hodge Riemann Relation* for the *commutative ring of a Matroid*. Let us connect the dots in this talk as we random-mix *Hodge structures* **walking back to the Math Club**.