

**Abstract:** We study several questions on combinatorics and geometry of surfaces of convex polyhedra. The most basic one is: can one compute the geodesic distance between two points on the surface? We present a general construction of a nonoverlapping unfolding of the surface of convex polyhedra, which allows such computation. The construction is based on an intricate study of cut locus of the surface and uses ideas from Differential Geometry as well as from Discrete and Computational Geometry.

The talk assumes no background whatsoever and should be accessible to general audience. This is a joint work with Ezra Miller.