ALEX COHEN, MIT

Branching structure in phase space

Let (p_j, ℓ_j) be a collection of point-line pairs with ℓ_j passing through p_j. We associate to this configuration a *branching function* $f(x, y, z)$ of three variables which measures how much the configuration concentrates in rectangles of various side ratios. Geometrical information about incidences can be phrased as algebraic information about f. This framework provides a new way to ask and answer questions about two dimensional continuous incidence geometry.

Joint with Cosmin Pohoata and Dimitrii Zakharov.