RECALL

Algorithms for Del. triang. / Voronoi diagram
ex. We can get either one from the other in $O(n)$ time

- 3D CH alg can compute 2D Del. triang $O(n \log n)$
  - divide and conquer.
- or can do divide & conquer directly
  the merge step is complicated.

- Fortune — sweep line alg. 1987 — today
- randomized incremental alg. — next week
intermediate configuration of Fortune’s algorithm

Voronoi edges

“beachfront” of parabolic sections

https://www.youtube.com/watch?v=rvmREoyL2F0
update events for Fortune’s algorithm

reach a new point

a new parabolic segment appears

a parabolic section vanishes. Our "event list" must include $y = k$
Another way to visualize Fortune’s algorithm

the Voronoi diagram can be viewed as the projection of the upper envelope of cones

and Fortune’s algorithm sweeps a plane $\pi$ across those cones
References


There is a better presentation of the incremental algorithm by Aurenhammer and Klein: [http://www.math.tau.ac.il/~michas/ak-vd-00.pdf](http://www.math.tau.ac.il/~michas/ak-vd-00.pdf)