

Plane Sweep

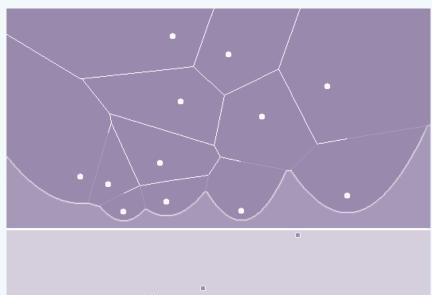
- Frozen Region

Junhui DENG

deng@tsinghua.edu.cn

Sweepline & Beach Line

- ❖ Here, we will distort the sweepline, rather than the diagram
- ❖ The sweeping process is controlled by:
 - A horizontal sweepline moving from top down
 - A beach line consisting of parabolic arcs
- ❖ As the SL moves downward,
 the BL moves downward as well, but
 its shape depends on location of the sites
- ❖ We will see that VD "grows out" of the BL



Frozen & Unfrozen

- *Recall that sites below the SL may affect the diagram that lies above
- ❖ To avoid this problem, we will maintain only the portion of the diagram that can't be affected by anything that lies below the SL
- The scanned halfplane is divided into:
 - 1) Frozen Region: points closer

 to sites above SL than to SL
 - 2) Unfrozen Region: points closer

 to SL than to sites above SL

