04-L-08

Voronoi Diagram

Divide-And-Conquer

- Clip & Stitch

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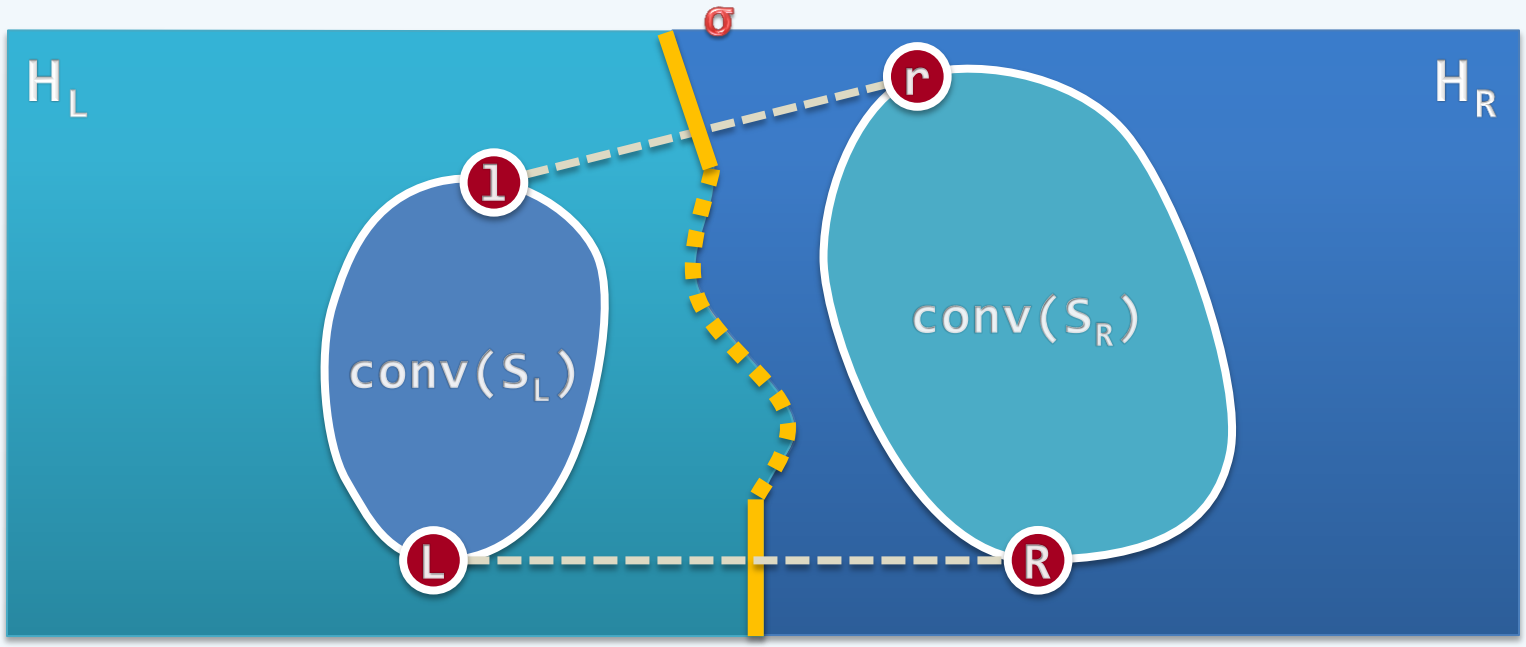
❖ Let H_L/H_R be the region of the plane to the left/right of σ

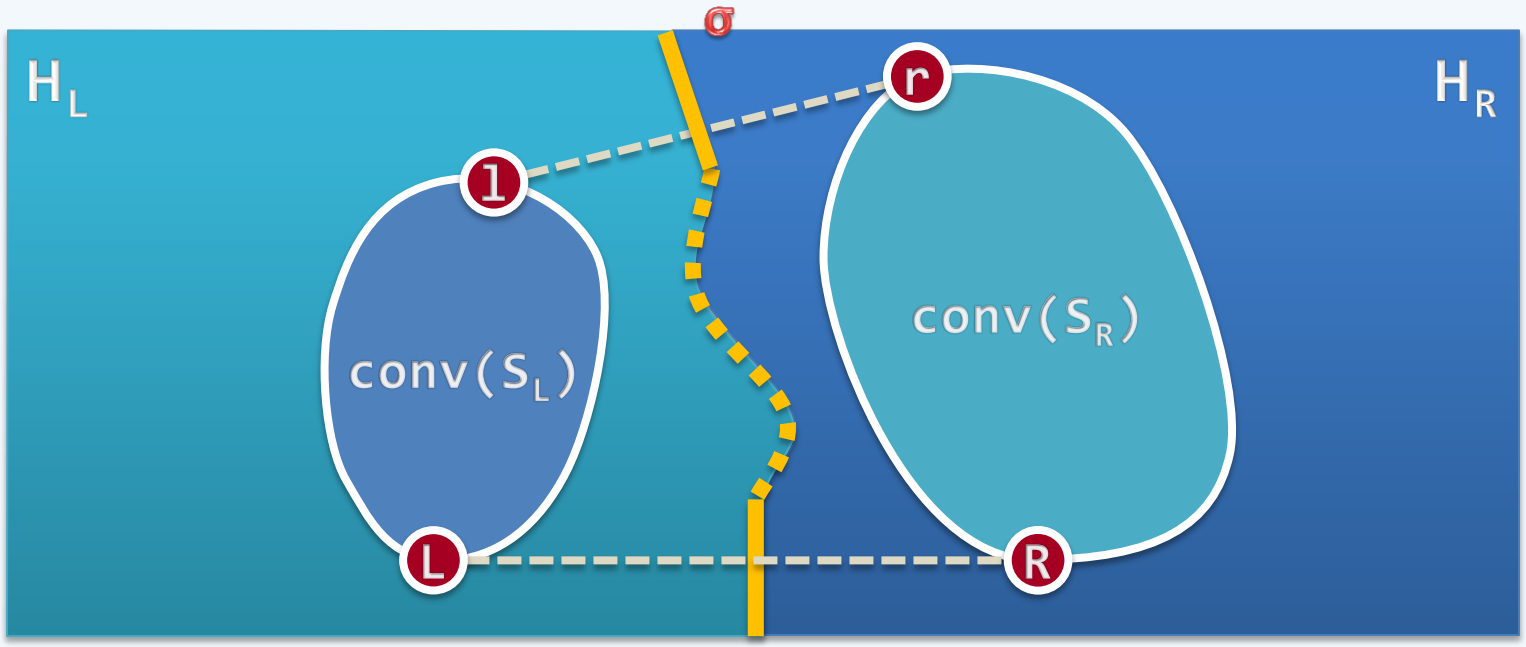
❖ $VD(S) = (VD(S_L) \cap H_L) \cup \sigma \cup (VD(S_R) \cap H_R)$

$= (VD(S_L) \setminus H_R) \cup (VD(S_R) \setminus H_L)$



❖ To merge sub-diagrams $VD(S_L)$ and $VD(S_R)$, it suffices to

clip $\boxed{VD(SL)}$ / $\boxed{VD(SR)}$ with $\boxed{H_R}$ / $\boxed{H_l}$



ComputeContourBetween(VD(SL), VD(SR))

❖ //Construct the contour between two vertically separable sub-diagrams

compute the **upper tangent** of conv(S_L) and conv(S_R)

//let **l**$\in S_L$ and **r**$\in S_R$ be tangent sites and **b** be the bisector of segment lr

trace the contour from top down

//assertion: Cell(l)$\cap$Cell(r) $\neq \varnothing$ and **b** is the bisector of **lr**

find **b $\cap$ ∂Cell(l)** and **b $\cap$ ∂Cell(r)**

clip and then **flip** the cell whose boundary intersects **b** **first**

update **l** or **r** //according to cell clipping

update **b**