

# 05-C-04 Delaunay Triangulation

Properties

- Complexity

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❖ As the general triangulations,

the number of triangles and edges in  $DT(S)$  is determined by

$$n = |S| \quad \text{and} \quad h = |CH(S)|$$

❖ Namely,  $DT(S)$  contains  $2(n-1) - h$  triangles and  $3(n-1) - h$  edges

❖ However, it is impossible to predict the number of triangles in  $DT(S)$  in higher-dimensional space, even both  $n$  and  $h$  are known

❖ In 3-dimensional space, for example, the number of triangles ranges from  $O(n)$  to  $O(n^2)$  for any combination of  $n$  and  $h$

❖ And more generally,  $DT(S)$  in  $\mathcal{E}^d$  might have  $O(n^{\lfloor d/2 \rfloor})$  triangles