Cell Decomposition from L^2-Delaunay Triangulations?

— Yanik Kleibrink in cooperation with Sam Freedman

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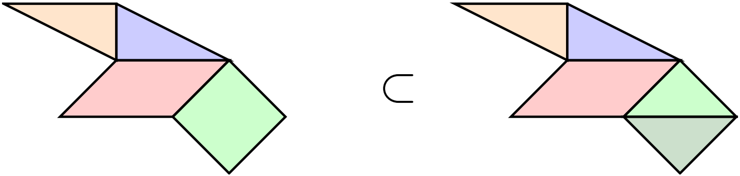

Initial Idea

- End Goal: Analyze the cohomology of strata $\mathcal{H}(a_1, \ldots, a_n)$ of translation surfaces.

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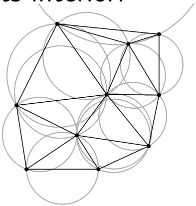
[1]

[1] By Gjacquenot - Own work, File:Delaunay circumcircles.png (Nü es), Public Domain, https://commons.wikimedia.org/w/index.php?curid=30370476

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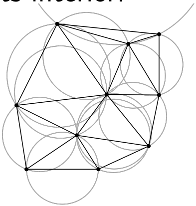

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- Idea: Translation surfaces with the same gluing datum of the triangles belong to the same "cell".

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- William Veech (1996): Delaunay triangulations lead to a cell decomposition of the moduli space of "*complex affine*" surfaces.
- Idea: Intersect this cell decomposition with the locus of translation surfaces.

  $\rightarrow$ Conditions:

$$\prod_{\dots} \frac{\sin(\dots)}{\sin(\dots)} = 1$$