The tesselations of real moduli spaces

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Abstract

We look at the property of "bubbling" which is inherent in the moduli space of punctured Riemann spheres. The real points $\overline{M}_{0,n}$ of this space is naturally tiled by associahedra (Stasheff polytope), which can be described in terms of polygons with non-intersecting diagonals. We look at the cellular decomposition of $\overline{M}_{0,n}$ and describe its structure from the viewpoint of real blow-ups of hyperplane arrangements. Relations are shown to combinatorics, homotopy theory (operads), and molecular genetics.