

A Lower Bound for the Hyperbolicity of Curve Graphs

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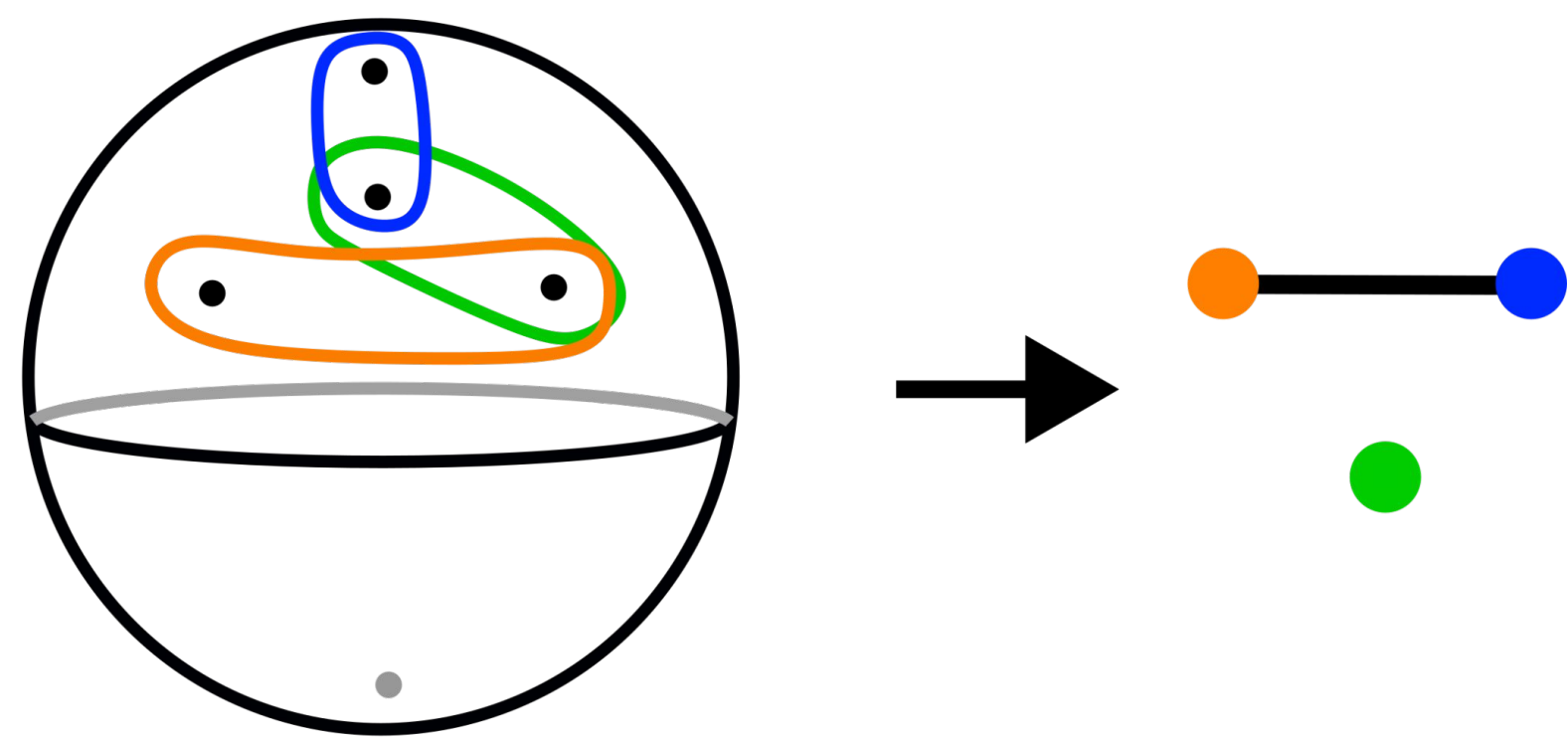


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Goal: find a lower bound for the hyperbolicity constant of the n -punctured sphere $S_{0,n}$.

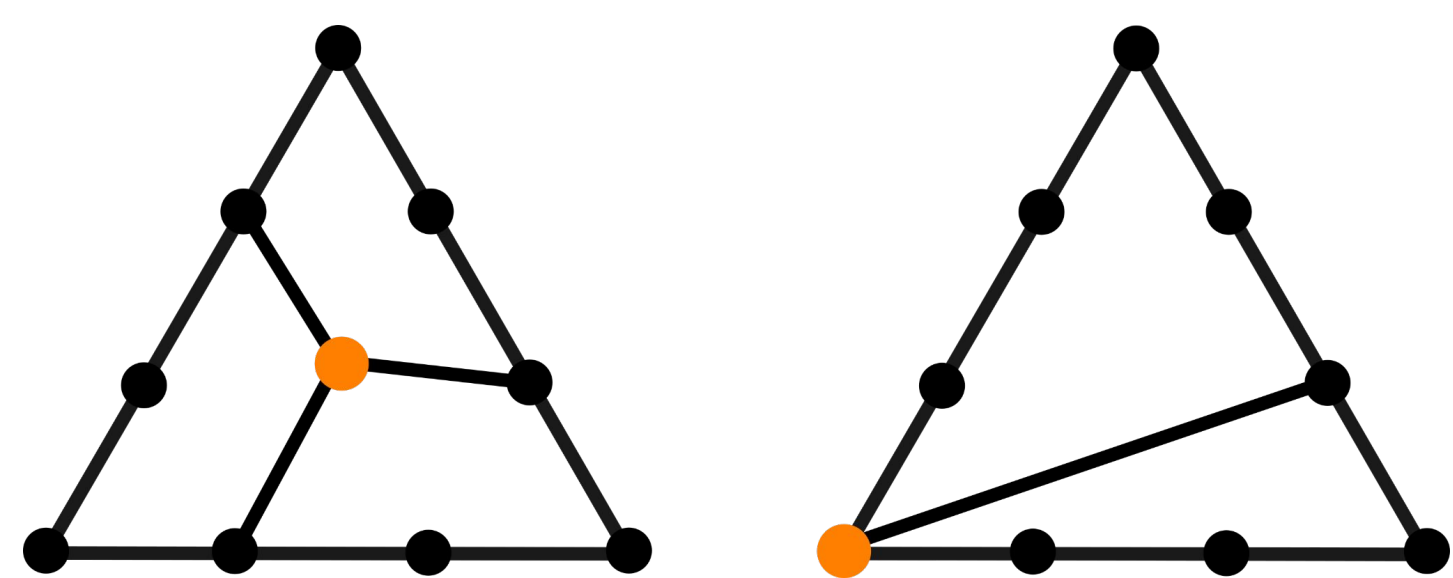
The Curve Graph

Vertices represent curves on $S_{0,n}$ and edges represent disjointness.



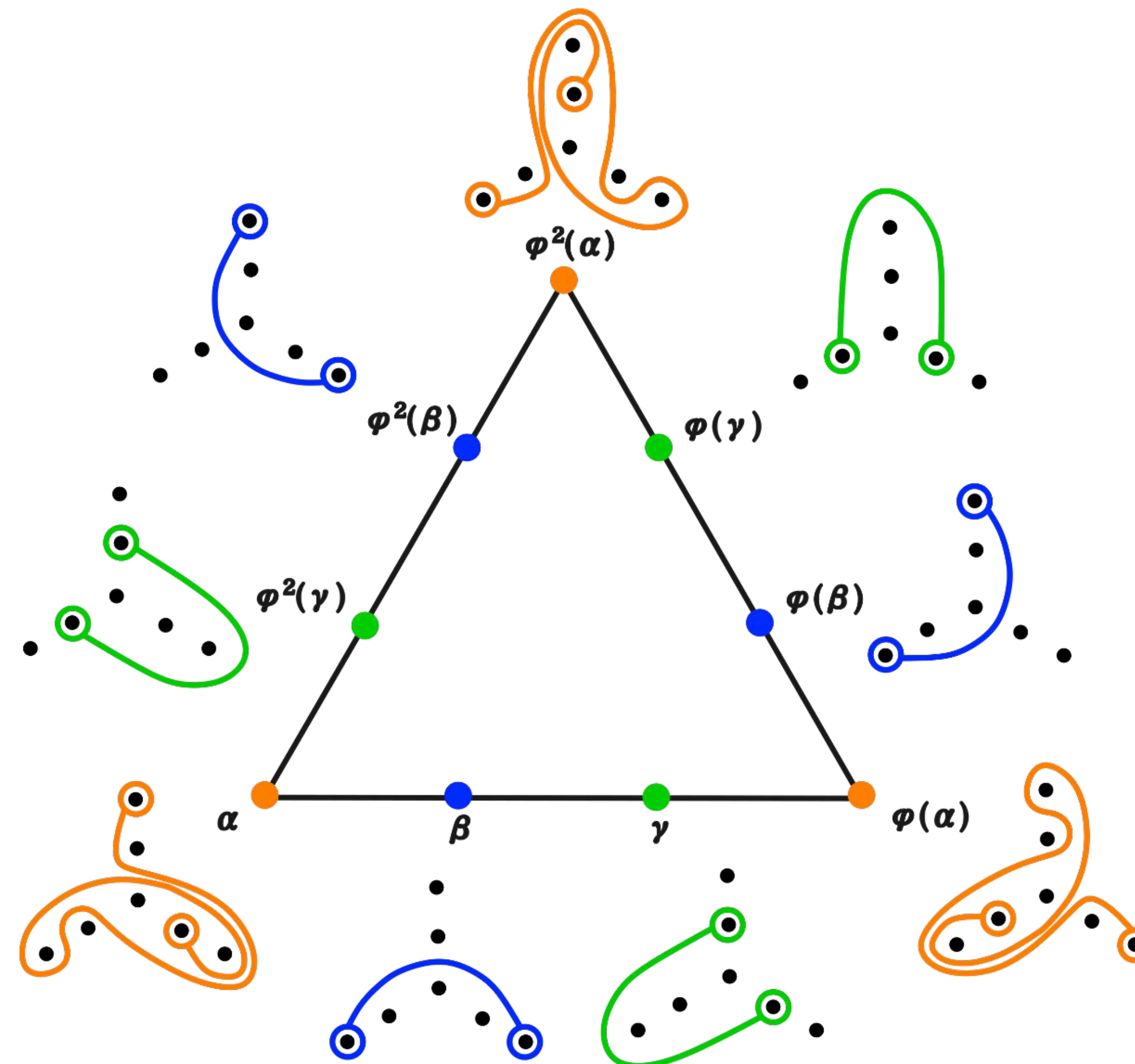
Hyperbolicity

A space is δ -hyperbolic if all geodesic triangles are δ -centered.



One-centered triangles in a graph

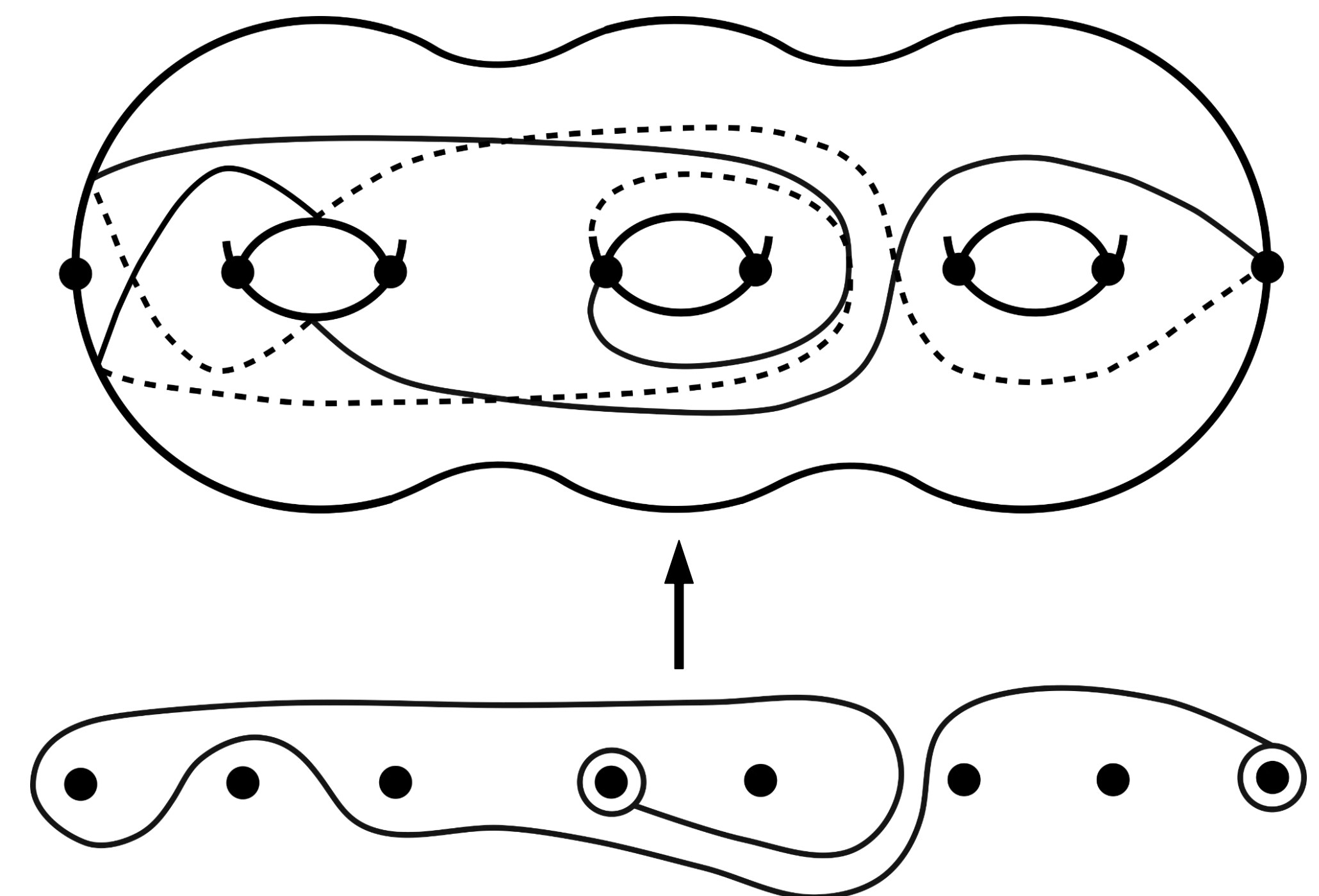
Theorem: the curve graphs of $S_{0,n}$ for $6 \leq n \leq 14$ are not 1-hyperbolic.



A not 1-centered triangle on $S_{0,8}$

Corollary: the curve graphs of $S_{g,0}$ for $2 \leq g \leq 6$ are not 1-hyperbolic.

Involutions of Curves



Further work

Extend the result to surfaces with any number of punctures and genus.

Acknowledgements

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