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METRIC PROPERTIES OF OUTER SPACE

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Abstract

We define metrics on Culler-Vogtmann space, which are an analogue of the Thurston metric and are constructed using stretching factors. In fact the metrics we study are related, one being a symmetrised version of the other. We investigate the basic properties of these metrics, showing the advantages and pathologies of both choices.

We show how to compute stretching factors between marked metric graphs in an easy way and we discuss the behaviour of stretching factors under iterations of automorphisms.

We study metric properties of folding paths, showing that they are geodesic for the non-symmetric metric and, if they do not enter the thin part of Outer Space, quasi-geodesic for the symmetric metric.

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