Fuchsian Differential Equations and the relations with the associated surfaces to the Farey tesselations

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Abstract

Fuchsian differential equations have as main characteristic the fact of all the singular points in the extended complex plane be regular. We observe an interesting relationship between the singularities of a differential equation fuchsian, the vertices of a fundamental triangle in Farey tessellations and the associated surface with transformation applied to the fundamental polygon.

We propose to relate the coefficients of a differential equation fuchsian containing n regular singular points with the surface associated to the pairing between the sides of the basic polygon.

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