

Cross-ratio dynamics on ideal polygons

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Let us call two ideal n -gons in the hyperbolic plane or the hyperbolic space orthogonal if their respective sides are perpendicular. A generic polygon is orthogonal to two others, which produces a sequence with orthogonal consecutive polygons. It is natural to ask how does this sequence behave: does it converge, is it chaotic, or something else?

In this talk I will show that this dynamics is integrable, that is in some sense similar to periodic.

This is a joint work with Maxim Arnold, Dmitry Fuchs, and Sergei Tabachnikov.