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# Reduction theory and coding of geodesics

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(joint work with Ilie Ugarcovici and Don Zagier)

Reduction theory and coding of geodesics Abstract: I will discuss a method of coding of geodesics on surfaces of constant negative curvature using boundary expansions of the endpoints. For the modular surface this is related to a new 2-parameter family of continued fractions, some of which, so-called "dual codes", can be used for coding. I will also give a dynamical interpretation of the "reduction theory" which underlines these constructions and its relation to the attractor of a certain associated natural extension map.