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Real-time dynamics of vector fields and affine structures on Riemann surfaces

lundi 10 juillet 2023 09:00 (1 heure)

In this talk, we will typically consider a homogeneous polynomial vector field X of degree ≥ 2 on $\mathbb{C}^2$. In particular, the time-one map induced by X defines a germ of parabolic diffeomorphism h of $(C^2, 0)$. The vector field X also induces a singular affine structure on the Riemann sphere which, in turn, leads to a "geodesic flow", or "billiard dynamics", encoding much of the dynamics of h. We will try to make these connections accurate, in particular explaining how the monodromy of the mentioned affine structure can be read off the projective holonomy of the foliation associated with X. If time permits, we might say a word about higher dimensional versions of this construction.

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