Plane Lorentzian and Fuchsian hedgehogs

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Abstract. Parts of the Brunn-Minkowski theory can be extended to hedgehogs, which are envelopes of families of affine hyperplanes parametrized by their Gauss map. F. Fillastre introduced Fuchsian convex bodies, which are the closed convex sets of Lorentz-Minkowski space that are globally invariant under the action of a Fuchsian group. In this paper, we undertake a study of plane Lorentzian and Fuchsian hedgehogs. In particular, we prove the Fuchsian analogues of classical geometrical inequalities (analogues which are reversed as compared to classical ones).