Geometrical finiteness in Hilbert geometry

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On any properly convex open set Ω of $\mathbb{RP}^d$, there is a distance called the Hilbert distance which is invariant by the group of projective transformation preserving the convex Ω. The Hilbert distance on the interior of an ellipse (resp. a triangle) gives a metric space isometric (resp. bilipschitz equivalent) to the real hyperbolic plane (resp. the euclidean plane). In general, if the convex is strictly convex with a boundary of regularity $\mathcal{C}^1$ then the corresponding Hilbert geometry has some hyperbolic behaviour.

In hyperbolic geometry, the notion of geometrically finite discrete group has been study a lot and can be define by at least 3 different but equivalent ways. We study this 3 equivalences in the broader world of Hilbert geometry assuming that the convex is strictly convex with a boundary of regularity $\mathcal{C}^1$. We will see that the situation is more complicated in this context.

This is a joint work with M. Crampon.