Similarlity geometry revisited: Differential Geometry and CAGD

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Similarity geometry is a Klein geometry whose transformation group is the similarity transformation group. The similarity transformation group is generated by Euclidean isometries and scalings.

One can develop differential geometry of plane curves under similarity transformation group. In particular we obtain similarity curvature, similarity Frenet formula and fundamental theorem of plane curves in similarity geometry.

On the other hand, in industrial design (CAGD), log-aesthetic curves are studied extensively. In this talk, we give a similarity geometric reformulation of log-aesthetic curves and discuss relations to curve flows derived form Burgers flows.