

A SPHERE WITH LARGE SYSTOLIC RATIO AND MANY SYSTOLS

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In this talk, we will discuss the Finsler systolic ratio on the 2-sphere for the Holmes-Thompson volume. We will prove that there exist a weak-finsler metric on the sphere with a systolic ratio that is arbitrary close to $\frac{4\pi}{3}$ and for which every point lies on a systol.

The best known systolic ratio on the 2-sphere is achieved by the Calabi-Croke sphere and, as proved by Florent Balacheff and Stephane Sabourau, this ratio is a local optimal for Riemannian metrics and for Finsler metrics, but the Calabi-Croke sphere only has 3 systols.

I will present the construction developed in collaboration with Louis Merlin, we built a sphere that is between the Zoll metrics and the Calabi-Croke metric. This construction is inspired by the work of Marcos Cossarini and Stephane Sabourau.