

## **Extremal metrics for the min-max width**

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Abstract: We present our study on the min-max width of Riemannian three-dimensional spheres. This is a natural geometric invariant which is closely related with critical values of the area functional acting on closed surfaces, and can be interpreted as the first eigenvalue of a non-linear spectrum of a Riemannian metric, as suggested by Gromov.

We will focus first on optimal bounds for the above invariant involving their volumes in a fixed conformal classes. If time permits we will discuss some general properties of extremal metrics for the min-max width.

This is all part of a joint work with Lucas Ambrozio.