## **Isoperimetric Problems**



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## Steiner Problem, global and local minimizers of the Length functional

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The Steiner problem, in its classical formulation, is to find the 1-dimensional connected set in the plane with minimal length that contains a finite collection of points.

Although existence and regularity of minimizers is well known, in general finding explicitly a solution is extremely challenging, even numerically.

A possible tool to validate the minimality of a certain candidate is the notion of calibrations.

In this talk I will introduce the different definitions of calibrations for the Steiner problem available in the literature,

I will give example of existence and non—existence of calibrations and I will show how one can easily get informations on both global and local minimizers.

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