CALIBRATIONS FOR MINIMAL STEINER NETWORKS

ALESSANDRA PLUDA

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Abstract: The Steiner problem in its classical formulation reads as follows: given a finite collection of points S in the plane, find the connected set that contains S with minimal length. Although existence and regularity of minimizers is well known, in general finding explicitly a solution is extremely challenging, even numerically. For this reason every method to determine solutions is welcome. A possible tool is the notion of calibrations. In this talk I will define calibrations for the Steiner problem within the framework of covering spaces. I will also give some example of both existence and non–existence of calibrations and to overcome this second unlucky case I will introduce the notion of calibration in families.