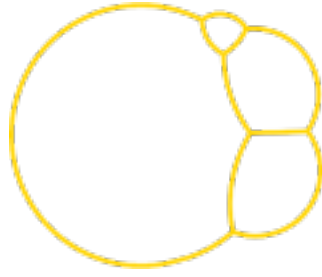Contribution ID: **98**   Type: **not specified**

Contact surface of Cheeger sets

Tuesday, 21 June 2022 15:50 (50 minutes)

Geometrical properties of Cheeger sets have been deeply studied by many authors since their introduction, as a way of bounding from below the first Dirichlet (p)-Laplacian eigenvualue. They represent, in some sense, the first eigenfunction of the Dirichlet (1)-Laplacian of a domain. In this talk we will introduce a recent property, studied in collaboration with Simone Ciani, concerning their contact surface with the ambient space. In particular we will show that the contact surface cannot be too small, with a lower bound on the (Hasudorff) dimension strictly related to the regularity of the ambient space. The talk will focus on the introduction of the problem and on the proof of the dimensional bounds. Functional to the whole argument is the notion of removable singularity, as a tool for extending solutions of pdes under some regularity constraint. Finally examples providing the sharpness of the bounds in the planar case are briefly treated.

Presenter: CAROCCIA, Marco (Politecnico di Milano)