Tuesday 19 January 2021 – at 2.30 p.m.

The event will take place online through the ZOOM platform:
https://unitn.zoom.us/j/82824794799
ID riunione: 828 2479 4799
Passcode: 763991

Nicholas Edelen
(Notre Dame)

Regularity of minimal surfaces near quadratic cones

Abstract:
Hardt-Simon proved that every area-minimizing hypercone C having only an isolated singularity fits into a foliation of the Euclidean space by smooth, area-minimizing hypersurfaces asymptotic to C. We prove that if a minimal hypersurface M in the unit ball lies sufficiently close to a minimizing quadratic cone (for example, the Simons’ cone), then, in the ball of radius 1/2, M is a $C^{1,\alpha}$ perturbation of either the cone itself, or some leaf of its associated foliation. In particular, we show that singularities modeled on these cones determine the local structure not only of M, but of any nearby minimal surface. Our result also implies the Bernstein-type result of Simon-Solomon, which characterizes area-minimizing hypersurfaces in the Euclidean space asymptotic to a quadratic cone as either the cone itself, or some leaf of the foliation. This is joint work with Luca Spolaor.

Contact persons: Andrea Marchese e Andrea Pinamonti