Epsilon-regularity for minimal surfaces near quadratic cones

Abstract:
Every area-minimizing hypercone having only an isolated singularity fits into a foliation by smooth, area-minimizing hypersurfaces asymptotic to the cone itself. In this talk I will present the following epsilon-regularity result: every minimal surfaces lying sufficiently close to a minimizing quadratic cone (for example, the Simons’ cone), is a perturbation of either the cone itself, or some leaf of its associated foliation. This result also implies the Bernstein-type result of Simon-Solomon, which characterizes area-minimizing hypersurfaces asymptotic to a quadratic cone as either the cone itself, or some leaf of the foliation, and it also allows to study convergence to singular minimal hyper surfaces. This is a joint result with N. Edelen.