
ZHICHAO WANG, The University of British Columbia
Min-max minimal hypersurfaces with higher multiplicity

Recently, X. Zhou proved that the Almgren-Pitts min-max solution has multiplicity one for bumpy metrics (Multiplicity One Theorem). In this talk, we exhibit the first set of examples of non-bumpy metrics on the $(n+1)$ -sphere ($2 \leq n \leq 6$) in which the varifold associated with the two-parameter min-max construction must be a multiplicity-two minimal n -sphere. This is proved by a new area-and-separation estimate for certain minimal hypersurfaces with Morse index two inspired by an early work of Colding-Minicozzi. This is a joint work with X. Zhou.