On the Regularity of Rectifiable n-Varifolds in the Critical Dimension n.

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Abstract: The theory of *"rectifiability"* provides a measure theoretic notion of "smoothness" for surfaces which are not smooth in the usual sense. *Rectifiable varifolds* were introduced as a generalization of minimal surfaces. Existence and regularity of rectifiable varifolds have been a major field of study in Geometric Measure Theory. Allard's regularity theorem is an outstanding result concerning the regularity of rectifiable varifolds. It examines the important question of how regular will a rectifiable n-varifold M be, if we assume bounded and L^p conditions on the generalized mean curvature of M, for $p > n$.

This talk is concerned with the critical dimension n. More precisely, how regular will a rectifiable n-varifold M be, if we assume bounded and L^n conditions on the generalized mean curvature of M.