1147-58-189 **Hang Chen** and **Guofang Wei*** (wei@math.ucsb.edu), Department of Math, UCSB, Santa Barbara, CA 93106. *Rigidity of minimal submanifolds in space forms.*

We prove the rigidity for an $n(\geq 4)$-dimensional submanfolds M^n with parallel mean curvature in the space form $\mathbb{M}_c^{n+p}$ when the integral Ricci curvature of M has some bound. Namely if $c + H^2 > 0$ and $\|Ric_-^\lambda\|_{n/2} < \epsilon(n, c, \lambda, H)$ for λ satisfying $\frac{n-2}{n-1}(c + H^2) < \lambda \leq c + H^2$, then M is the totally umbilical sphere $\mathbb{S}^n(\frac{1}{\sqrt{c+H^2}})$. Here H is the norm of the parallel mean curvature of M, and $\epsilon(n, c, \lambda, H)$ is a positive constant depending only on n, c, λ and H. This extends some of the earlier work of Xu-Gu from pointwise Ricci curvature lower bound to integral Ricci curvature lower bound. This is a joint work with Hang Chen. (Received January 16, 2019)