

1136-05-346

Martina Juhnke-Kubitzke, Satoshi Murai, Isabella Novik and Connor Sawaske*
(sawaske@uw.edu). *Lower bound theorems for balanced manifolds.*

Juhnke-Kubitzke and Murai proved a balanced generalized lower bound theorem for simplicial polytopes. We extend their result to balanced triangulations of orientable homology manifolds whose proper links have the weak Lefschetz property. As a corollary, we prove a conjecture of Klee and Novik that if Δ is a balanced triangulation of a connected $(d-1)$ -dimensional orientable homology manifold, then $2h_2(\Delta) - (d-1)h_1(\Delta) \geq 4\binom{d}{2}\tilde{\beta}_1(\Delta)$. (Received January 19, 2018)