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An Improved Terai-Yoshida Theorem

In 2005, Terai-Yoshida showed that certain class of Stanley-Reisner rings having sufficiently large multiplicities are Cohen-Macaulay. In the joint work with Anton Dochtermann, Jay Schweig, Adam Van Tuyl and Russ Woodrooffe, we strengthen their result by showing that simplicial complexes having many facets are vertex decomposable. If time permits, we shall also discuss an alternative proof for the Alexander dual version of the Terai-Yoshida result.