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Kristin A Camenga* (kristin.camenga@houghton.edu), Houghton College, 1 Willard Avenue, Houghton, NY 14744. *Properties of the γ -vector, an angle analog of the h -vector*. Preliminary report.

The i th angle sum of a polytope counts the sum of the solid angles at i -dimensional faces of a polytope. We define the γ -vector of a polytope as a linear combination of the angle sums in a manner analogous to the h -vector as a linear combination of the f -vector. This gives a simplified formulation of the angle-analog of the Dehn-Sommerville relations on simplicial polytopes. We also prove results about the nature of the gamma-vector, showing the entries of the gamma-vectors are non-decreasing for low-dimensional simplices and non-negative for low-dimensional polytopes. (Received August 28, 2006)