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Anvar Mavlyutov* (mavlyutov@math.okstate.edu), Department of Mathematics, Oklahoma State University, Stillwater, OK 74075. *Cohomology of rational forms on toric varieties.*

We will show how to compute cohomology $H^k(P, \Omega_P^m(X))$ of differential forms with simple poles along a semiample divisor X on a complete simplicial toric variety P . The calculation is reduced to finding the cohomology of an Ishida complex and we also get a dimension formula for these groups in terms of the combinatorics of the fan, which generalizes Bott's formula in the case of a projective space. The Bott vanishing theorem is generalized in the toric case for semiample divisors. The cohomology of rational forms is necessary for the description of the cohomology of semiample quasismooth hypersurfaces in toric varieties. (Received February 21, 2005)