ABSTRACT

Given a toric manifold (M^{2n}, P^n),with P^n having m facets Then for every sequence of positive integers $J = (j_1, \dots, j_m)$ we construct a toric manifold denoted by $(M(J), P(J))$, where if $d(J) = \sum j_i$, $(M(J), P(J))$ has dimension $(2d(J) - 2m + 2n, d(J) - m + n)$. The original toric manifold corresponds to the sequence $(1, 1, ..., 1)$ and is naturally embedded in $M(J)$. The manifold M^{2n} comes with a locally standard action of the torus T^n and with a characteristic epimorphism $\lambda\colon T^m \to T^n$. A presentation of the cohomology ring $H^*(M(J))$ is as the quotient of $H^*(BT^m)$ by the sum of two ideals.One is the J-weighted Stanley-Reisner face ideal of P^n and the other is the "linear" ideal of M^{2n} , generated by the image of $H^2(BT^n)$ in $H^2(BT^m)$ under $B^*(\lambda)$.