

NK_1 OF BAK'S UNITARY GROUPS OVER
GRADED RINGS

In 1966-67, A Bak introduced the concept of “form rings” and “form parameter” to give a uniform definition of classical groups. This group is known as Bak’s Unitary group or general quadratic group. In this talk we recall the definition of Bak’s group and its elementary subgroups. After recalling the notion of Bak’s Unitary group, we have deduced the graded Local-Global principle for this group. The kernel of the group homomorphism $K_1GQ^\lambda(R[X], \Lambda[X]) \rightarrow K_1GQ^\lambda(R, \Lambda)$ induced from the form ring homomorphism $(R[X], \Lambda[X]) \rightarrow (R, \Lambda) : X \mapsto 0$ is defined by $NK_1Q^\lambda(R, \Lambda)$. We often say it as Bass’s nilpotent unitary K_1 -group of R . We have proved that Bass’s nil group has no k -torsion when $kR = R$. Using graded Local-Global principle of Unitary group, we also deduce the analog result for the graded rings.

This is a joint work with R. Basu.