

IDEMPOTENTS IN RING EXTENSIONS

This is a joint work with P. Kanwar and J.Matczuk.

The aim of the talk is to study idempotents of ring extensions $R \subseteq S$ where S stands for one of the rings $R[x_1, x_2, \dots, x_n]$, $R[x_1^{\pm 1}, x_2^{\pm 1}, \dots, x_n^{\pm 1}]$, $R[[x_1, x_2, \dots, x_n]]$. We give criterions for the idempotents of S to be either contained or conjugate to idempotents of R . In particular, we will show that idempotents of the power series ring are conjugate to idempotents of the base ring and we apply this to get a new proof of the result of P.M.Cohn that the ring of power series over a projective free ring is also projective free. Applications related to 2 primal rings will also be given.