3. V. M. Bondarenko and M. Yu. Bortosh *Indecomposable and isomorphic objects in category of monomial matrices over a local ring*, Ukrainian Mathematical Journal, **69** (2017), 889 – 904.

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Normal loop rings

Victor Bovdi

Let KG be the loop ring of a di-associative loop G over the associative and commutative ring K with unity, let σ be an antiautomorphism of order two of G and let $f : G \to U(K)$ be a homomorphism from G to $U(K)$. For an element $x = \sum_{g\in G} \alpha_g g \in KG$ we define

$$x^{\alpha(f,\sigma)} = \sum_{g\in G} \alpha_g f(g)\sigma(g).$$

The map $\alpha(f, \sigma) : x \mapsto x^{\alpha(f,\sigma)}$ is an involution of KG if and only if

$$g\sigma(g) \in Kerf = \{\ h \in G \mid f(h) = 1\ \} \qquad \text{for all} \quad g \in G.$$

A loop ring KG is called normal if $xx^{\alpha(f,\sigma)} = x^{\alpha(f,\sigma)}x$ for all $x \in KG$. The description of the classical normal group rings and twisted group rings were obtained in **[1, 4]** and **[2, 3]**, respectively.

In my talk we discus the question when a loop ring KG is normal.

A joint work with A. Grishkov, L. Sabinina and M. Salim.

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