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**Natalia K Iyudu\*** (n.joudu@yahoo.de) and **Stanislav A Shkarin**. *A proof of the Kontsevich conjecture on noncommutative birational transformations.*

I will talk about our proof (arXiv1305.1965) of the Kontsevich conjecture dated back at 1996, and discussed at the 2011 Arbeitstagung talk on ‘Noncommutative identities’ (arXiv1109.2469, p.5). This conjecture says that certain transformations given by matrices over free noncommutative algebra with inverses (‘free field’ due to P.Cohn) are periodic, on the level of orbits of the left/right diagonal action. Namely, let

$$(M_{ij}), 1 \leq i, j \leq 3$$

be a matrix, whose entries are independent noncommutative variables. Let us consider three ‘birational involutions’

$$I_1 : M \rightarrow M^{-1}; I_2 : M_{ij} \rightarrow M_{ij}^{-1},$$

for all  $i, j$ ;

$$I_3 : M \rightarrow M^t.$$

Then the composition

$$\Phi = I_1 \circ I_2 \circ I_3$$

has order three. (Received September 03, 2019)