REPRESENTATIONS OF VIRTUAL BRAID GROUPS TO THE ROOK ALGEBRAS

KONSTANTIN GOTIN

In [1] S. Bigelow, E. Ramos, R. Yi constructed representation of the group $B_n$ in the group of invertible elements of the subalgebra $\mathbb{C}P_n$ of the rook algebra $\mathbb{C}R_n$. We will demonstrate that to extend the braid group given representation to a virtual braid group representation one will need to extend the algebra $\mathbb{C}P_n$ in some sense. We will construct a representation of the group $VB_n$ to rook algebra $\mathbb{C}R_n$ such that its restriction on $B_n$ coincides with the representation of the group $B_n$ in the $\mathbb{C}P_n$.

In [2] T. Kadokami classified closed virtual 2-braids completely as virtual links and showed, that nontrivial closures of different virtual 2-braids are equal if and only if this braids are conjugate. Using this fact we will also show that our representation can be used for construction some invariants of virtual links.

REFERENCES


Novosibirsk State University, Pirogova Street, 2, Novosibirsk, 630090 Russia

E-mail address: gktin@yandex.ru

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