1125-47-1018 **Sujan Pant*** (sujan-pant@uiowa.edu), Iowa City, IA 52246. *Structural results for von Neumann algebras arising from poly-hyperbolic groups and Burger-Mozes groups.*

Denote by $\mathcal{C}$ the class of all non-amenable groups that are hyperbolic of non-trivial free products. For every positive integer n denote by $Quot_n(\mathcal{C})$ the class of groups that can be realized as n-step extensions of groups in $\mathcal{C}$ [?]. We show that the von Neumann algebras of these groups enjoy the following structural property: Let $\Gamma \in Quot_n(\mathcal{C})$ and suppose $A_1, A_2, \ldots, A_k \subset L(\Gamma)$ are *arbitrary* commuting subalgebras with no amenable direct summands that generate together a finite index of $L(\Gamma)$. Then Γ is commensurable to a product $\Lambda_1 \times \Lambda_2 \times \cdots \times \Lambda_k$ with $\Lambda_i \in Quot_{n_i}(\mathcal{C})$ and $n_1 + n_2 + \cdots + n_k = n$. Also, up to corners, $A_i \cong L(\Lambda_i)$, for all i. In particular, $L(\Gamma)$ is prime if and only if Γ is virtually indecomposible as a product over groups in $Quot(\mathcal{C})$. The same techniques also show Burger-Mozes groups gives rise to prime von Neumann algebras. This is the first occurrence of prime factors arising from simple groups. This is based on a joint work with Rolando de Santiago.

(Received September 14, 2016)