AN APPLICATION OF SUBSPACE ARRANGEMENTS TO GEOMETRIC GROUP THEORY

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ABSTRACT. A right-angled Artin group (RAAG) is a finitely presented group whose only relations are that some of the generators commute. We investigated the pure symmetric outer automorphisms of RAAGs—a pure symetric automorphism is one that sends each standard generator to a conjugate of itself. In order to understand the structure of these groups, we used a sophisticated invariant called the BNS invariant. For the groups in question, the BNS invariant is a subspace arrangement. To distinguish different cases, we built a new homology theory for subspace arrangements. This is joint work with Richard D. Wade.