1116-Z1-2747 **Anisah Nabilah Nu'Man*** (anisah.numan@trincoll.edu), 534 Prospect Ave., Hartford, CT 06105. *Intrinsic Tame Filling Functions.* Preliminary report.

Let G be a group with a finite presentation $\mathcal{P} = \langle A|R\rangle$ such that A is inverse- closed. Let $f : \mathbb{N}[\frac{1}{4}] \to \mathbb{N}[\frac{1}{4}]$ be a nondecreasing function. Filling invariants are quasi-isometry invariants for groups with finite presentations defined using properties of van Kampen diagrams. Loosely, f is an intrinsic tame filling function for $(G, \mathcal{P})$ if for every word w over A that represents the identity element in G, there exists a van Kampen diagram Δ for w over $\mathcal{P}$ and a continuous choice of paths from the basepoint $*$ of Δ to the boundary of Δ such that the paths are steadily moving outward as measured by f. Tame filling functions are a recent pair of asymptotic invariants that are a strengthening of the intrinsic diameter (i.e., isodiametric) function and the extrinsic diameter function. In contrast to diameter functions, it is unknown if every pair $(G, \mathcal{P})$ has a finite-valued tame filling functions. In this talk I show that two group constructions, namely graph products and certain free products with amalgamation, preserve finite-valued intrinsic tame filling functions.

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