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SOLVABLE GROUPS WITH POLYNOMIAL DEHN FUNCTIONS.

G. N. ARZHANTSEVA AND D. V. OSIN

ABSTRACT. Given a finitely presented group H, finitely generated subgroup B of H, and a monomorphism $\psi : B \to H$, we obtain an upper bound of the Dehn function of the corresponding HNN-extension $G = \langle H, t \mid t^{-1}Bt = \psi(B)\rangle$ in terms of the Dehn function of H and the distortion of B in G. Using such a bound, we construct first examples of non-polycyclic solvable groups with polynomial Dehn functions. The constructed groups are metabelian and contain the solvable Baumslag-Solitar groups. In particular, this answers a question posed by Birget, Ol'shanskii, Rips, and Sapir.

SECTION DE MATHÉMATIQUES, UNIVERSITÉ DE GENÈVE, CP 240, 1211 GENÈVE 24, SWITZERLAND
E-mail address: Goulnara.Arjantseva@math.unige.ch

DEPARTMENT OF HIGH ALGEBRA, MEHMAT, MOSCOW STATE UNIVERSITY, 119899 MOSCOW, RUSSIA
E-mail address: Denis.Osin@mtu-net.ru

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