

Quasi-morphisms on Surface Diffeomorphism Groups

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We show that the identity component of the group of diffeomorphisms of a closed oriented surface of positive genus admits many unbounded quasi-morphisms. As a corollary, we also deduce that this group is not uniformly perfect and its fragmentation norm is unbounded, answering a question of Burago–Ivanov–Polterovich. As a key tool we construct a hyperbolic graph on which these groups act, which is the analog of the curve graph for the mapping class group. (joint with S. Hensel and R. Webb)