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Dupont-Guichardet-Wigner quasi-homomorphisms and mapping class group

Abstract: In this joint work with Luis Funar (Institut Fourier-CNRS) we construct homogeneous quasi-morphisms on the mapping class groups of a genus $g \geq 3$ surface. They appear as restrictions of symplectic Dupont-Guichardet-Wigner quasi-morphisms on pseudo-unitary groups pulled back along the quantum representations of the mapping class groups. By deep results of Burger and Iozzi, these quasi-morphisms classify Zariski dense representations of mapping class groups in pseudo-unitary groups. We will discuss this construction and how the knowledge of these quasi-morphisms may shed some light on the arithmeticity of the quantum images of mapping class groups.