Theodore Voronov* (theodore.voronov@gmail.com), School of Mathematics, University of Manchester, Manchester, M13 9PL, United Kingdom. Classical and quantum microformal morphisms. Main facts and action on cohomology.

This is a report on an ongoing project called ”microformal geometry”. We consider ”thick” (also ”microformal”) morphisms between manifolds or supermanifolds, which are a generalization of smooth maps. A thick morphism from $M_1$ to $M_2$ induces a pullback of functions which is a non-linear transformation. Such non-linear pullbacks give $L_\infty$-morphisms for homotopy Poisson structures. They also arise as classical limits of certain quantum analogs, which are particular formal Fourier integral operators. We discuss relation of thick morphisms with spinor representation (partly based on work in progress with H. Khudaverdian). We also show how thick morphisms act on tangent bundles and on de Rham cohomology. (Received July 14, 2019)