

# A CONSTRUCTION OF VARIATIONS OF NON-COMMUTATIVE HODGE STRUCTURES

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Given a family of dg-categories  $A$ , parametrized by a scheme  $X$ , we can consider the corresponding family of periodic cyclic homology  $HP(A)$ , which is a complex of sheaves on  $X$ . The purpose of this talk is to show that  $HP(A)$  underlies a "variation of non-commutative Hodge structures" (i.e. a Gauss-Manin connexion, a Hodge filtration, and a rational structure). The construction I will present is based on three fundamental tools: trace maps in rigid monoidal  $\infty$ -categories, loop spaces in derived algebraic geometry and topological K-theory of dg-categories.