## CO-PERIODIC CYCLIC HOMOLOGY Dmitry Kaledin, Steklov Math Institute, Moscow

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Periodic cyclic homology is defined by taking the product-total complex of a certain bicomplex. For algebras over  $\mathbb{Q}$ , taking the sum-total complex of the same bicomplex gives 0. It has been suggested by Kontsevich some years ago that in char p, the sum-total complex is a non-trivial and interesting invariant. At the time, the suggestion was not pursued seriously; however, recently a very similar phenomenon appeared in the work of Beilinson and Bhatt on p-adic Hodge theory. I want to revisit the subject and follow through on Kontsevich's idea, both for algebras and DG algebras. The resulting "co-periodic cyclic homology" theory is derived Morita-invariant, is an algebra over Laurent polynomials in one variable of cohomological degree -2, and exhibits several other interesting features.