

Hausdorff School

Derived Noncommutative Geometry

$$K^{\text{top}}(\text{Perf}(X)) = KU(X(\mathbb{C}))$$

$$D^b(\text{coh}(X)) \simeq \text{Fuk}(\tilde{X})$$

$$\text{ch} : K(\mathcal{A}) \rightarrow \text{HC}^-(\mathcal{A})$$

$$\langle n \rangle = \begin{array}{c} \textcircled{1} \\ \textcircled{2} \\ \textcircled{3} \\ \vdots \\ \textcircled{n} \end{array} \in \Lambda$$

$$DSing(X) = D^b(\text{coh}(X)) / \text{Perf}(X)$$

$$S^1 \curvearrowright CC_*(\mathcal{A})$$

$$HH_*(\mathcal{A}) \otimes k[u, u^{-1}] \Rightarrow HP_*(\mathcal{A})$$

Dates: May 29 - June 2, 2017

Organizers: Anthony Blanc (*Bonn*), Michael Brown (*Bonn*), Tobias Dyckerhoff (*Bonn*)

Location: Lipschitz Hall, Endenicher Allee 60

Derived noncommutative geometry can be understood as the idea to formulate geometry in terms of categories, the guiding example being the derived category of coherent sheaves on an algebraic variety. The goal of this summer school, aimed at postdocs and graduate students, is to learn about a selection of topics where derived noncommutative geometry plays a role. The school will be centered around the following three lecture series.

Speakers:

Dmitry Kaledin (*Steklov Mathematical Institute, Moscow*)
Topological field theory in dimension one

Tony Pantev (*University of Pennsylvania, Philadelphia*)
Non-abelian Hodge theory and mirror symmetry for character varieties

Bertrand Toën (*Université de Toulouse*)
Matrix factorizations, motives and conductor formula



Limited financial support for PhD students and postdocs is available. Please send applications (including a letter of intent, a CV, and a letter of recommendation) using our online application form at hcm.uni-bonn.de/ngc-2017. For questions please contact mbrown@math.uni-bonn.de. The deadline for applications is **March 31, 2017**.