九大代数学セミナー

日時 2017 年 4 月 14 日（金） 15:00-16:00 / 16:15-17:15
場所 九州大学伊都キャンパス ウエスト 1 号館 5 階 C-512 中講義室

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15:00-16:00 Olivia Caramello 氏（IHÉS）

- **"When do fundamental groups exist?"**

- The talk will present an abstract topos-theoretic framework for building Galois-type theories in a variety of different mathematical contexts: this unifies and generalises Grothendieck's theory of 'Galoisian categories' and Fraïssé's construction in model theory.

  This theory allows one to construct fundamental groups in many classical contexts such as finite groups, finite graphs, motives and many more.

  We will in particular present an approach based on it for investigating the independence from ℓ of ℓ-adic cohomology.

16:15-17:15 Laurent Lafforgue 氏（IHÉS）

- **"Fundamental groups and imaginary covers"**

- This talk is based on joint work with O. Caramello.

  It examines the concrete construction of the new categories classified by fundamental groups as defined in the previous talk.

  Many classical categories - such as the categories of finite groups or finite graphs and their embeddings or their surjective homomorphisms - naturally embed into larger categories classified by fundamental groups. The new 'imaginary' objects which have to be added to make these categories Galoisian can be described concretely.

  These constructions allow one to associate new invariants - including cohomological invariants - to groups, graphs and many geometric objects.

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