

Algebraic K-Theory Seminar

An action of the Grothendieck-Teichmüller group on stable curves of genus zero.

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Abstract: The Grothendieck-Teichmüller group is an explicitly defined group introduced by Drinfeld which is closely related to (and conjecturally equal to) the absolute Galois group. The idea was based on Grothendieck's suggestion that one should study the absolute Galois group by relating it to its action on the Teichmüller tower of fundamental groupoids of the moduli stacks of genus g curves with n marked points. In this talk, we give an reimagining of the genus zero Teichmüller tower in terms of a profinite completion of the framed little 2-discs operad. Using this reinterpretation, we show that the homotopy automorphisms of this model for the Teichmüller tower is isomorphic to the (profinite) Grothendieck-Teichmüller group. We then show a non-trivial action of the absolute Galois group on our tower. This talk will be aimed a general audience and will not assume any previous knowledge of the Grothendieck-Teichmüller group or operads. This is joint work with Pedro Boavida de Brito and Geoffroy Horel.

Wednesday, November 15 at 10:30 AM in SEO 1227