

Genus zero modular operad & Grothendieck-Teichmüller group's avatar

Noemie Combe, Yuri I. Manin

Max Planck Institute for Mathematics

Abstract

In this talk, we develop the geometry of canonical stratifications of the spaces $\overline{\mathcal{M}}_{0,n}$ and prepare ground for studying the action of the Galois group or the field of rational numbers upon strata. We introduce a categorical framework for the description of symmetries of genus zero modular operad. This description merges the techniques of recent "persistence homology" studies and the classical formalism of groupoids. We provide a new avatar of profinite Grothendieck–Teichmüller group acting upon this operad, but seemingly not related with representations of the Galois group of all algebraic numbers. From a broader point of view, this study is related to:

1. the recent geometric operadic development of classical Grothendieck–Teichmüller theory – the Galois compatible study of the automorphisms of the Knudsen tower of the moduli spaces of curves via their étale fundamental groups – as developed by Fresse and Horel – and to
2. the arithmetic of the full special subloci $\mathcal{M}_{0,[n]}(G)$ of smooth marked curves $\mathcal{M}_{0,[n]}$ as initiated by Schneps then developed by Collas and Maugeais with GT and Galois flavours.

Keywords: Moduli space of genus 0 curves with marked points, operads, Absolute Galois group, Grothendieck–Teichmüller

References

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