Séminaire de théorie des nombres

Le 21 octobre 2024 à 14h (Jussieu)

Standard hypothesis and conjectures

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Résumé : The universal Weil cohomology (obtained in a recent work jointly with B. Kahn) is taking values in an abelian tensor category which is rigid but its algebra E of endomorphisms of the unit is not a field, a priori. The standard hypothesis is that this absolutely flat algebra E is a domain hence a field : this hypothesis is a consequence of Grothendieck's standard conjectures but could be that it is not equivalent to the conjectures, eventually. In zero characteristic, André's theory of motivated cycles can be recovered via the universal Weil cohomology ; moreover, if E is a field then E is the field of rational numbers and André's category is then universal for all Weil cohomologies. In positive characteristics, if André's category is abelian then a similar picture holds true but E could be a transcendental extension of the rational numbers. In general, the algebra E could be considered as an abstract algebra of periods or universal coefficients for Weil cohomologies.