

Abelian varieties & Galois actions

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ABSTRACTS

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Title : *On compatibility of the ℓ -adic realisations of abelian motives*

Abstract : In the sixties, Serre introduced the concept of a compatible system of Galois representations. Since Deligne proved the Weil conjectures, we know that the l -adic étale cohomology groups of a smooth projective variety over a number field form such a compatible system. The analogous statement for the ℓ -adic realisations of a motive (in the sense of Andre, or absolute Hodge cycles) is not known in general. I will introduce the concept of quasi-compatibility, a slightly relaxed version on the original condition. Familiar notions, such as Frobenius tori, are still accessible under this weaker condition. I will show how a recent result of Kisin may be used to show that the l -adic realisations of an abelian motive (in the sense of Andre, or absolute Hodge cycles) give rise to an E -rational quasi-compatible system of Galois representations. If time permits, I will mention some applications of the main theorem to the Mumford-Tate conjecture.