

RELATIVE HIGHER ALBANESE MANIFOLDS OVER MODULAR CURVES

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p -adic analogues of higher Albanese manifolds play a central role in Kim's non-abelian Chabauty. In this talk I will introduce a relative version of higher Albanese manifolds in the complex analytic setting and give an explicit construction of them for modular curves.

The corresponding Albanese mappings are given by iterated integrals of modular forms of arbitrary weight. The "abelian" higher Albanese mappings are normal functions (in the sense of Griffiths) that one can associate to a Hecke eigen cusp form. I will explain their relation to certain families of algebraic cycles constructed from Hecke operators.

My hope is that these relative higher Albanese mappings will be a useful tool in the investigation of rational points on modular curves via Chabauty--Kim.