Computation of Framed Deformation Functors

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Abstract. The purpose of this talk is the application of Deformation Theory, originally developed by Mazur [2], to the classification of abelian varieties performed by Abrashkin [1] and Schoof [3]. After recalling the main definitions and results of Deformation Theory, I will describe some local-to-global arguments for the computation of a Universal Deformation Ring. I will finally show a direct computation of a Framed Deformation Ring, in the case of representations coming from elliptic curves with minimal ramification property; these examples match the properties of the varieties classified in [3].

References

[1] Abrashkin, V. A. Galois Moduli of Period p Group Schemes over a Ring of Witt Vectors, *Math. USSR Izvestiya* **31** (1988).

[2] Mazur, B. An Introduction to the Deformation Theory of Galois Representations, *Modular Forms and Fermat's Last Theorem* (1998), 243-312.

[3] Schoof, R. Abelian varieties over $\mathbb{Q}$ with bad reduction in one prime only, *Comp. Math.* **141** (2005), 847-868.