

Completely faithful Selmer groups over Kummer extensions

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Abstract

We present a generalized Weierstrass Preparation Theorem for formal skew power series rings. This is used to show that the Pontryagin dual of the Selmer group of certain elliptic curves over some Kummer extension is a faithful torsion module over the Iwasawa algebra, i.e. does not possess any global annihilator. We conclude discussing an Euler characteristic formula for the Selmer group in this context. (The last two items stem from a joint work with Y. Hachimori).