HEEGNER POINTS ON HIJIKATA–PIZER–SHEMANSKE CURVES AND THE BIRCH AND SWINNERTON-DYER CONJECTURE

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Abstract: We study Heegner points on elliptic curves, or more generally modular abelian varieties, coming from uniformization by Shimura curves attached to a rather general type of quaternionic orders. We address several questions arising from the Birch and Swinnerton-Dyer (BSD) conjecture in this general context. In particular, under mild technical conditions, we show the existence of non-torsion Heegner points on elliptic curves in all situations in which the BSD conjecture predicts their existence.

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Key words: BSD conjecture, Heegner points, L-functions, Shimura curves.