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Antonio LEI. Pseudo-null modules and codimension two cycles for supersingular elliptic curves.

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Abstract: Let E/Q be an elliptic curve with supersingular reduction at an odd prime p and $a_p(E)=0$. Let K be an imaginary quadratic field where p splits and write K_∞ for the compositum of all \mathbb{Z}_p -extensions of K . Generalizing Kobayashi's plus and minus Selmer groups over cyclotomic extensions of Q , Kim defined \pm -Selmer groups for E over K_∞ . We present numerical examples where the intersection of a pair of these Selmer groups is pseudo-null. This allows us to give explicit examples which affirm the pseudo-nullity conjecture of Coates and Sujatha. We will also explain how to relate these Selmer groups to Loeffler's 2-variable p -adic L -functions via codimension two cycles. If time permits, we will discuss how our technique can be extended to the setting of tensor products of Hida families. This is joint work with Bharath Palvannan.