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Raymond van Bommel*, 77 Massachusetts Avenue, Cambridge, MA 02139. *Explicit arithmetic intersection theory and computation of Néron-Tate heights.*

We describe a general algorithm for computing intersection pairings on arithmetic surfaces. We have implemented our algorithm for curves over \mathbb{Q} , and we show how to use it to compute regulators for a number of Jacobians of smooth plane quartics, and to numerically verify the conjecture of Birch and Swinnerton-Dyer for the Jacobian of the split Cartan curve of level 13, up to squares. This is joint work with David Holmes and J. Steffen Müller. (Received September 11, 2019)