1007-11-142 **Alexandru A. Popa*** (aapopa@princeton.edu), Mathematics Department, Princeton University, Washington Road, Princeton, NJ 08544. *Closed geodesics on modular curves, and the rank 0 Birch and Swinnerton-Dyer conjecture over real quadratic fields.* Preliminary report.

I will discuss the connection between a special value formula for the Rankin L-series of an elliptic curve E defined over $\mathbb{Q}$, twisted by characters of a real quadratic field K, and the BSD conjecture for E over K. When the rank of $E(K)$ is zero, the BSD conjecture over K can be restated in terms of the homology class of a geodesic cycle attached to the real quadratic field, leading to a conjectural formula for the order of the Tate-Shafarevich group of E over K. (Received February 17, 2005)