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Byungchul Cha* (cha@hendrix.edu), 1600 Washington Ave., Conway, AR 72032. *Vanishing of Some Cohomology Groups and Bounds for Shafarevich-Tate Groups of Elliptic Curves.*

Let K be a number field, E be an elliptic curve over \mathbb{Q} , and p be a fixed odd prime. Under certain assumptions, we prove that the Galois cohomology group of $\text{Gal}(K(E[p^i])/K)$ with coefficients in $E[p^i]$ vanishes for all $i \geq 1$. This result is used to extend a result of Kolyvagin, which finds a bound for the p -part of Shafarevich-Tate group of E in a way consistent with the prediction of Birch and Swinnerton-Dyer conjecture. (Received March 06, 2006)