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Ognian Trifonov* (trifonov@math.sc.edu), Department of Mathematics, LeConte College,
1523 Greene Street, Univ. of South Carolina, Columbia, SC 29229. *Lattice points close to a smooth
curve and applications.*

We prove new estimates for the number of lattice points close to a curve and use them to improve on a result of Luca and Sparlinski on the number of certain extremal finite fields. We also obtain formulas for the number of representations of an integer as a difference of a k -free number and a small prime. (Received February 03, 2015)