1052-11-17Ricardo P Conceicao* (rconceic@math.utexas.edu), The University of Texas at Austin,
Department of Mathematics., 1 University Station C1200, Austin, TX 78712. Twists of elliptic
curves with a large set of integral points over function fields.

We will explicitly construct quadratic and cubic twists of supersingular elliptic curves with arbitrarily many integral points defined over $\mathbb{F}_q(t)$.

If time permits, we will also provide three different applications of these constructions. First they will be used to show that the conjecture of Lang-Vojta concerning the behavior of integral points in varieties of log-general type cannot be readily transported to the function field case. As a second application, we will show that these constructions provide examples of elliptic curves with an explicit large set of independent points. Finally, we will use them to construct quadratic and cubic function fields over \mathbb{F}_q with class group of large *m*-rank, for *m* dividing q + 1. (Received May 21, 2009)