1077-14-2153 **Ronald van Luijk*** (rvl@math.leidenuniv.nl) and **Cecilia Salgado**. *Density of rational points on Del Pezzo surfaces of degree one.*

The Segre-Manin Theorem implies that if a Del Pezzo surface S of degree at least three, defined over $\mathbb{Q}$, has a rational point, then the rational points are Zariski dense in S. A result of Manin yields the same for degree two, as long as the initial point avoids a specific subset. Similar results for Del Pezzo surfaces of degree one are meager: they either depend on conjectures, or they are restricted to small families of surfaces.

Every Del Pezzo surface of degree one has a natural elliptic fibration. Ulas showed for a family of isotrivial Del Pezzo surfaces of degree one that there is a genus-one multisection of the fibration of infinite order; if this multisection contains infinitely many rational points, then the set of rational points on the surface is dense.

We will generalize Ulas' technique by showing that for every Del Pezzo surface S of degree one and any point P on it (other than the unique base point of the elliptic fibration), there is a genus-at-most-one multisection going through P. For sufficiently general P, the existence of infinitely many rational points on the multisection implies that the set of rational points is dense on S. (Received September 21, 2011)