1057-13-236 **Silvio Greco** (silvio.greco@mail.polito.it), Dipartimento di Matematica, Politecnico di Torino, I-10129 Torino, Italy, **Karlheinz Kiyek*** (karlh@math.upb.de), Institut fuer Mathematik, Universitaet Paderborn, D 33098 Paderborn, Germany, and **Jesus Soto**. *The blow-up of a simple complete ideal of a two-dimensional regular local ring.* Preliminary report.

Let R be a two-dimensional regular local ring with residue field k. Let $\wp$ be a simple complete ideal of R, set $r := \mathrm{ord}_R(\wp)$, let $R = R_0 \subsetneqq \cdots \subsetneqq R_h = S$ be the quadratic sequence determined by $\wp$, and assume that $S/\mathfrak{m} = k$. Let $\mathcal{T}$ be the rational points in the first neighbourhood of S. Let $X = \mathrm{Bl}_\wp(R)$ be the blow-up of $\wp$, let E be the exceptional locus, and set $E^* := \{Q \in E \mid Q \text{ closed and rational}\}$. The singular points of X lie on E^*; the number of singular points of X is equal to the number of satellite points of $\wp$.

From now on, assume that k is infinite. Let $\mathcal{S}$ be the set of complete ideals of R which are adjacent to $\wp$ from below. There exists exactly one ideal in $\mathcal{S}$ of order $r+1$; it is not simple. There exists exactly one ideal in $\mathcal{S}$ of order r which is not simple iff $\wp$ has two satellite points.

There exist natural bijections $\mathcal{S} \to \mathcal{T}$, $\mathcal{S} \to E^*$. (Received January 24, 2010)