1116-VN-2190 **Michael Wijaya*** (michael.wijaya.gr@dartmouth.edu). *A function-field analogue of Conway's topograph.*

In *The Sensual (Quadratic) Form*, Conway introduces a visual method to display values of an integral binary quadratic form $Q(x,y) = ax^2 + bxy + cy^2 \in \mathbb{Z}[x,y]$. This topograph method, as he calls it, leads to a simple and elegant method of classifying integral binary quadratic forms and answering some basic questions about them. In particular, Conway uses his climbing lemma to show that the topograph of any definite (respectively, indefinite) integral binary quadratic form has a unique "well" (respectively, "river").

We will present an analogue of Conway's topograph method in the function-field setting, that is, for binary quadratic forms with coefficients in $\mathbb{F}_q[T]$, where q is an odd prime power. Our starting point was the connection between Conway's topograph method and hyperbolic geometry; this led us to consider the Bruhat–Tits tree of $\mathrm{SL}_2\big(\mathbb{F}_q((T^{-1}))\big)$ as the natural setting for our work. After we formulate and prove an analogue of Conway's climbing lemma, we establish that just as in the classical setting, there is a unique "well" (respectively, "river") on the topograph of any definite (respectively, indefinite) binary quadratic form with coefficients in $\mathbb{F}_q[T]$. (Received September 22, 2015)