1075-13-186 **Karl Schwede** and **Kevin Tucker***, kftucker@princeton.edu, and **Wenliang Zhang**. *Test ideals via a single alteration and discreteness and rationality of F-jumping numbers.*

Suppose (X, Δ) is a log-$\mathbb{Q}$-Gorenstein pair. Recent work of M. Blickle and the first two authors gives a uniform description of the multiplier ideal $\mathcal{J}(X; \Delta)$ (in characteristic zero) and the test ideal $\tau(X; \Delta)$ (in characteristic $p > 0$) via regular alterations. While in general the alteration required depends heavily on Δ, for a fixed Cartier divisor D on X it is straightforward to find a single alteration (e.g. a log resolution) computing $\mathcal{J}(X; \Delta + \lambda D)$ for all $\lambda \geq 0$. In this paper, we show the analogous statement in positive characteristic: there exists a single regular alteration computing $\tau(X; \Delta + \lambda D)$ for all $\lambda \geq 0$. Along the way, we also prove the discreteness and rationality for the F-jumping numbers of $\tau(X; \Delta + \lambda D)$ for $\lambda \geq 0$ where the index of $K_X + \Delta$ is arbitrary (and may be divisible by the characteristic). (Received August 29, 2011)