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Daniel J Hernández* (dhernan@umn.edu). *On F -purity at the F -pure threshold.*

Motivated by the (conjectured) relationship between F -purity and log canonical singularities, we examine the singularities of positive characteristic pairs at the F -pure threshold. In particular, we show that if R is an F -pure ring and $f \in R$, then the pair (R, f) must be F -pure at the F -pure threshold. We point out that the corresponding statement is known to be false for more general pairs, and even fails for certain pairs consisting of a monomial ideal of a polynomial ring over \mathbb{F}_p . We also show that certain strong conditions on the set of all F -pure thresholds, previously known to hold only when R is F -finite and regular, hold in the greatest possible generality. (Received August 30, 2011)