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Mordechai Katzman and **Gennady Lyubeznik*** (gennady@math.umn.edu), 206 Church Street, S.E., Department of Mathematics, University of Minnesota, Minneapolis, MN 55455, and **Wenliang Zhang**. *On the discreteness and rationality of F -jumping coefficients.*

The F -jumping coefficients of a principal ideal of an excellent local ring of characteristic $p > 0$ are all rational and form a discrete subset of the real numbers. This sharpens a result of Blickle, Mustata, and Smith. Our proof uses a novel idea, namely, instead of D -modules we use the Frobenius action on the injective hull of the residue field of the ring. (Received January 28, 2009)