

1031-13-34

Hans Schoutens* (hschoutens@gc.cuny.edu), Department of Mathematics, 365 Fifth Avenue, CUNY Graduate Center, New York, NY 10016. *Characterizing ring properties through uniform behavior.*

By work of Hubl, Rees, and Swanson, we know that a Noetherian local ring is analytically irreducible (i.e., its completion is a domain) if and only if multiplication is bounded in the sense that the adic order of a product is bounded as a function of the adic orders of the factors. If one uses parametric degree instead of or in conjunction with adic order, than other ring-theoretic properties can also be characterized through similar uniform behavior. Unlike the first cited result, these bounds are not yet known to be of linear nature; this is because currently the only way I know how to prove these results is by means of ultraproducts. (Received July 24, 2007)