

1056-13-721

**Craig Huneke\***, Department of Mathematics, University of Kansas, Lawrence, KS 66045, and  
**Louiza Fouli**, Department of Mathematics, New Mexico State University, Las Cruces, NM 88003.

*What is a system of parameters?* Preliminary report.

We describe joint work in progress with Louiza Fouli. The basic problem comes from a result of S. Dutta and P. Roberts. Their theorem states that if  $R$  is a Cohen-Macaulay local ring,  $x_1, \dots, x_d$  are a system of parameters, and  $y_1, \dots, y_d$  are elements inside the ideal generated by  $x_1, \dots, x_d$ , then the map from  $R/(x_1, \dots, x_d)$  to  $R/(y_1, \dots, y_d)$  given by the determinant of a matrix of coefficients, obtained by writing each  $y_j$  in terms of the  $x_i$ , is injective if and only if the  $y_1, \dots, y_d$  form a system of parameters. We discuss various extensions and generalizations of this theorem by removing the Cohen-Macaulay hypothesis. (Received September 16, 2009)