



UNIVERSITY OF CALIFORNIA RIVERSIDE

DEPARTMENT OF MATHEMATICS

COLLOQUIUM

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“Infinitesimal deformation in higher dimensional space”

Abstract: Given a collection of points p_1, p_2, \dots, p_d in \mathbb{R}^n , may we choose a polynomial of degree m each of whose partial derivatives at each point, up to given order, are ascribed? In \mathbb{R} , this is straight-forward to see by the Lagrange-Hermite Theorem. More generally, we seek whether we may impose $d \binom{n+k}{k}$ conditions on the space S_m of polynomials of degree at most m . Here, in higher degree it does not suffice that $\dim S_m$ exceeds the number of conditions. We shall examine how this is the case, and go through conjectures and results on these issues. Further, we shall mention motivation on this such as the study of standard jet bundles on curves, the Waring problem on polynomials, the Froberg conjecture on the ideal of a general collection of polynomials.

Wednesday, February 18, 2009

Surge 284

4:15-5:00pm

Tea Time at 3:45pm