

HYPERSURFACES WITH VANISHING HESSIAN VIA GORDAN-NOETHER THEORY AND PERAZZO MAP

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Projective hypersurfaces whose hessian matrix has vanishing determinant were studied systematically by Gordan and M. Noether in 1870 when they analyzed Hesse's claim according to which these hypersurfaces should be necessarily cones.

The aim of the lectures is to provide a general introduction to the subject showing its relevance for several areas of mathematics (differential and algebraic geometry, PDE, etc) and to present a geometrical interpretation of Gordan and Noether approach via the use of Perazzo map. The main applications will be old and new classification results in low dimension or low degree.