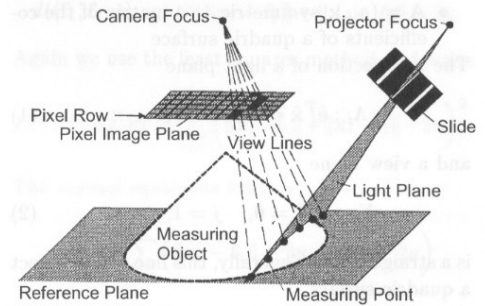


BÄR, G.; KORTHALS, T.:

3D-Evaluation of Light Intersection Images. Proceedings 3D Analysis and Synthesis '96. Infix, pp. 23-29

Electro-optical 3D-measuring systems consisting of a CCD-camera, a grid projection device, and corresponding image processing equipment are well-known and increasingly used in industry. The authors are interested in the problem to predict the accuracy and performance of such a system on the base of single accuracies of its components and the dimension of the measured objects. Here, specifically, the measuring of industrial objects like balls, bevels, and shafts is investigated.

Such objects can be represented by quadric surfaces. The fact that a light plane of the projector intersects a quadratic surface along a conic is used. Furthermore, all conics of the same measuring capture are projectively related. These geometric phenomena are used to perform computer simulation of high accuracy measurement of axes, diameters, and angles which are found at the considered objects.



Capture of measuring points