

DAILY ASSESSMENT FORMAT

Course:	IIRS Outreach program	Name:	Bindu.N.R
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Org By:	ISRO	Semester & Section:	6-B
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Topic Completed Today

INDIAN INSTITUTE OF REMOTE SENSING, DEHRADUN

Depth Perception

■ Methods of judging depth:

1. Monoscopic
2. Stereoscopic

Monoscopic method

1. Relative size of objects.
2. Hidden objects
3. Shadows
4. Difference in focusing of eye

Occlusion Relative size Cast Shadows

Shading Distance to horizon

Texture gradient Linear perspective

30 June 2020_Concepts of Stereophotogrammetry by Dr. Poonam S. Tiwari

Stereo Photogrammetry

Measurements from stereo-photogrammetry were expected to be systematically greater than measurements from single photogrammetry since the latter neglected depth. This was not the case. Mean absolute differences between the two sets of measurements fell within 1 mm for all distances. However, values of the maximum absolute difference for PFL, ICD and OCD were high (>2mm). In addition, mean differences for these distances approached 1 mm. A measurement error of 1 mm for PFL could result in misclassification of this feature if it lies close to the border between the normal and the abnormal range (Iosub *et al.*, 1985; Thomas *et al.*, 1987; Hall *et al.*, 1989). The reliability of eye distance measurements from single planar photographs without three-dimensional calibration may therefore be questioned; larger errors might be expected in measurements of features lying off the midline of the face. These results may be attributed to the inability to control for slight rotation of the camera with respect to the face and the inability to ensure that the eyes are at the same depth as that for which the images were calibrated.

It may be concluded that investigators who use single frontal photographs to obtain eye distance measurements should be aware of the inaccuracies that may be inherent in such measurements and of the importance of the relative placement of the camera, the face and the calibration instrument during image acquisition.