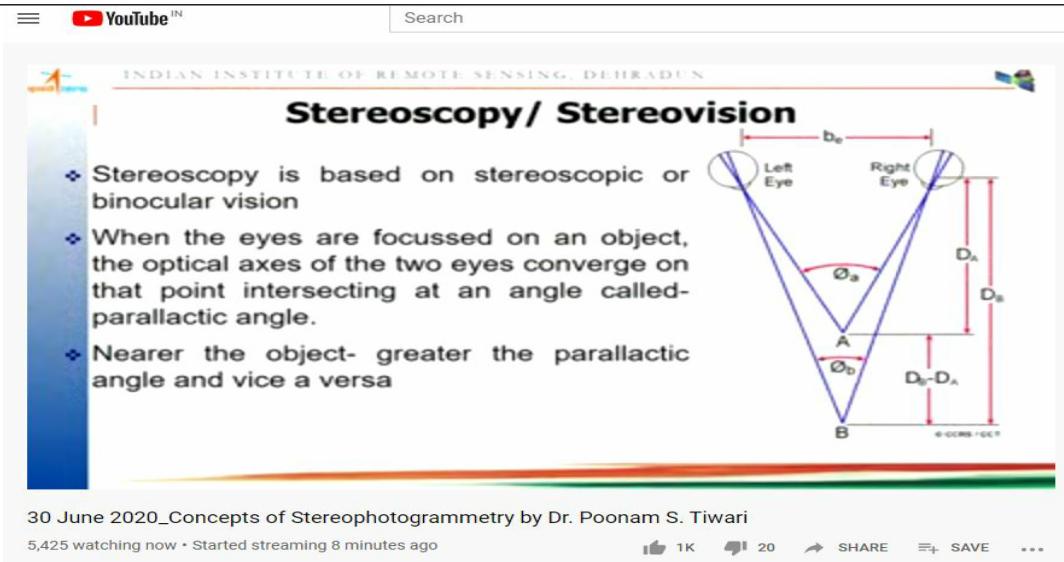


DAILY ASSESSMENT

Date:	30-06-2020	Name:	POOJA K S
Course:	Satellite Photogrammetry and its Application	USN:	4AL17EC070
Topic:	Concepts of stereogrammetry	Semester & Section:	6 TH SEM & 'B' Section
Github Repository:	pooja-shivanna		

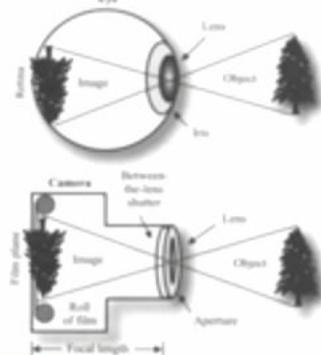
SESSION DETAILS	
	



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In the brain



Preprocessing of left image (image enhancement etc.)

Expectation

Preprocessing of right image (image enhancement etc.)

Knowledge (Experience)

Stereo processing

Image understanding

Storage (memory)

Decision taking

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

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<https://www.youtube.com/watch?v=rKC3ReLZxSQ>

1K

20

SHARE

SAVE

...



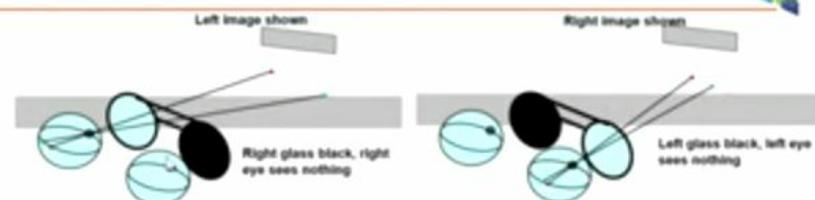
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Alternating Images



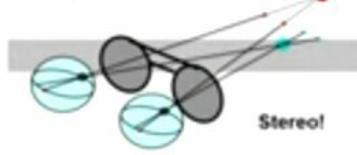
Alternating images on the monitor screen with alternating shutters for 3D stereo-viewing



Right glass black, right eye sees nothing

Left glass black, left eye sees nothing

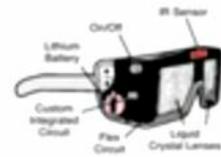
Combined effect:



Stereo!



Alternating images for stereoview



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

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Depth Perception

Methods of judging depth

- Monoscopic
- Stereoscopic

Monoscopic method

- Relative size of objects
- Hidden objects
- Shadows
- Difference in focusing of eyes

Stereoscopy / Stereovision

- Stereoscopy is based on stereoscopic or binocular vision
- When the eyes are focussed on an object, the optical axes of the two eyes converge on that point intersecting at an angle called parallactic angle.
- nearer the object greater the parallactic angle and vice versa.
- Stereoscopy is the name given to the phenomenon of an apparent three dimensional "model" created by viewing two photographs of the same object, one photograph with each eye, simultaneously.

Viewing Stereophotographs in Digital Environment

A display which produces an effect of depth for the viewer by means of stereo image pairs and active or passive glasses/monitor.

Basic requirement for 3D stereo viewing

- Observer's left eye must see the left image only of the two overlapping images
- The right eye, should see the corresponding part of the right image only

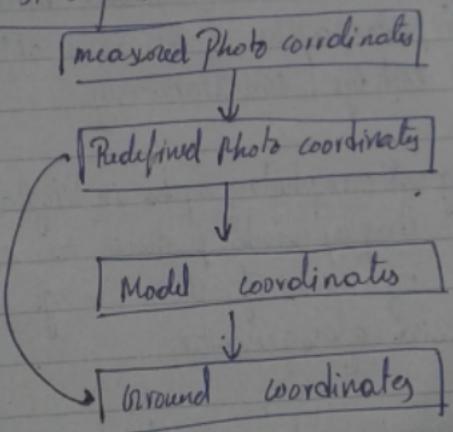
Stereophotogrammetry

- Stereophotogrammetry is the general term applied to the science of measurement from photographs when an overlapping stereopair of photographs is used.
- In contrast to single photographs which can only extract 2D information, stereophotogrammetry allows 3D information to be extracted.
- An overlapping stereopair is a pair of photographs on which the same object or area of terrain is pictured, but from different views or perspectives.

Coplanarity Condition

The two exposure stations of a stereopair, any object point and its corresponding image points on the two photos, all lie in a common plane.

Orientation of stereopair



Interior Orientation

Allow reconstruction of the bundle of rays, which formed the image.