

DAILY ASSESSMENT FORMAT

Date:	03-07-2020	Name:	Yamunashree N
Course:	IIRS Outreach Programme	USN:	4AL17EC097
Topic:	Satellite Photogrammetry and its Applications	Semester & Section:	6th SEM & 'B' SEC
Github Repository:	yamunashree-course		

FORENOON SESSION DETAILS

Image of session

The screenshot shows the IIRS E-CLASS live session interface. The main content area displays a presentation slide titled "Uses of DEM" with a list of applications: Derivation of contour lines, Orthophoto generation, Production of visibility maps, Profile determination, Volume determination, Generation of slope models, Urban Planning and Utility Planning, Perspective presentations, and 3D - GIS...... The presenter, Dr. Anil Kumar, is visible in a video feed at the bottom right. The interface includes a left sidebar with navigation options like Live Session, Offline Session, Study Material, Attendance Status, Course Guidelines, and Feedback. The top right shows the E-CLASS logo and a "Live Now" button. The bottom right features a chat window with messages from participants like Saksham Raj, MANAN NEEMA, Ayush Choudhary Choudhary, and Vaishnavi M.



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Apps | New Tab | Syngene VPN

E-CLASS
ELECTRONIC COLLABORATIVE LEARNING AND KNOWLEDGE SHARING SYSTEM

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Presenter: Dr. Anil Kumar Live Now

DEM Precision

INDIAN INSTITUTE OF REMOTE SENSING, DEHRADUN

0.1 m precision
0% 17%

1.0 m precision
0%

Ask Question

Saksham Raj
Present sir 3:55 PM

MANAN NEEMA
good afternoon everyone 3:55 PM

Ayush Choudhary Choudhary
Watch offline lecture to get the attendance 3:55 PM

Vaishnavi M
Watch offline lectures you will get the attendance ...
Nihal Tadakamadadi
I watched but i did not

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Automatic DTM Point Collection

INDIAN INSTITUTE OF REMOTE SENSING, DEHRADUN

Least Squares Correlation:
When least squares correlation fits a search window to the reference window, both radiometric (pixel gray values) and geometric (location, size, and shape of the search window) transformations are calculated.

Where:
 c_r, r_r = the pixel coordinate in the reference window
 c_s, r_s = the pixel coordinate in the search window
 $g_r(c_r, r_r)$ = the gray value of pixel (c_r, r_r)
 $g_s(c_s, r_s)$ = the gray value of pixel (c_s, r_s)
 a_0, a_1, a_2 = linear gray value transformation parameters
 b_0, b_1, b_2 = affine geometric transformation parameters

Based on this assumption, the error equation for each pixel is derived, as shown in the following equation:

$$v = (a_1 + a_2 c_1 + a_3 r_1) g_c + (b_1 + b_2 c_1 + b_3 r_1) g_r - b_1 - b_2 g_s(c_s, r_s) + \Delta g$$
 with $\Delta g = g_s(c_s, r_s) - g_r(c_r, r_r)$
 where g_r and g_s are the gradients of $g_s(c_s, r_s)$.

$g_s(c_s, r_s) = h_0 + h_1 g_r(c_r, r_r)$
 $c_s = a_0 + a_1 c_1 + a_2 r_1$
 $r_s = b_0 + b_1 c_1 + b_2 r_1$

Ask Question

please watch class in offline in e-class portal and attendance will be updated 3:55 PM

JYOTHI K G
Good evening sir 3:55 PM

KARAN JADAV
Present 3:55 PM

Archana P
Sir today is the last session of this course 3:55 PM

afroz basha shaik
I have attended all sessions but not sir



Hemalatha Dand
HALITEC035
6 Sem, A Sec

papergrid

Date: / /

SIRS Outreach programme

Satellite Photogrammetry & its applications

Days: 03/07/2020 - Friday

Dr. Anil Kumar

Uses of DEM

- Derivation of contour lines
- Orthorectification
- Prediction of visibility

Automatic DSM Point Collection

Image Matching Techniques

- > Area - based matching
- > Feature based matching
- > Relation based matching

Automatic DSM Point Collection

Least square correlation

Feature based matching

- Feature based matching determines the correspondence between two image patches

Ortho rectification

Planimetrically correct Orthorectified



> Advantages of use of Digital Orthophotos

Input of generating an Orthophoto

The input data required for the orthophoto generation using aerial photographs (Aerial photography):

- > Photo length
- > Lens distortion
- > Fiducial marks coordinates
- > Ground

• Least square correlation:

When least square correlation is used, each window to the reference window, both coordinates (pixel values) & geometry (location, size & shape of the search window) transformation are calculated.

- Product which can be readily interpreted like a photograph.
- Product in which data distortions, angles & areas can be measured & mapped in digital format.

