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Introducing the Global Elevation Data Testing Facility

φ = 4° 58' 28"
λ = 114° 53' 35"

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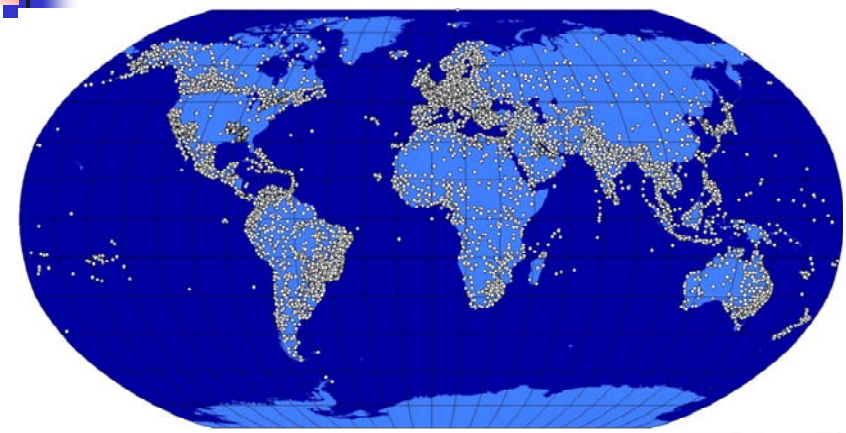
What is GEDTF?

The Global Elevation Data Testing Facility is a database of features found in the world that are flat, large (>500m by 15m) and having smooth homogeneous surface. At present, the database contains about 8,500 runways. With its strict technical parameters, runway can be a test bed for a range of calibration and accuracy assessment tasks of the air- and space-borne measurement systems.

Runways currently stored in GEDTF



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The GEDTF database

The data for the GEDTF were compiled from various sources.

The structure of a record includes:

- Region of the world.
- Country.
- Airport name.
- Runway number.
- Latitude and longitude of both ends of runway.
- Elevations of both ends of runway.
- Length and width of the runway.
- Type of surface material (Asphalt, concrete, turf, etc).

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Conditions of use

The data querying mechanism will allow extracting records within a 5° by 5° tile for free.

Data for larger areas are available at request but you will be asked to make a DONATION.

If you intend to publish your research & you used GEDTF, you would need to include an extra author's name.

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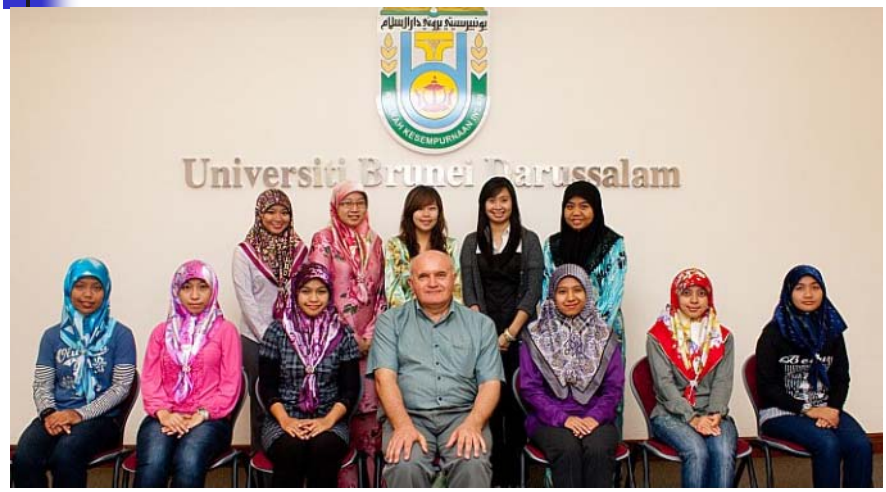
You can also contribute!



How is the accuracy of a DEM assessed?

Usually by showing an array of discrepancies:

d = *assessed DEM – reference DEM*,

and some numbers such as min/max(d), mean(d), STD(d) and a histogram

But this approach is dependent on the type of terrain:
Different results will be achieved over different types of terrain even if the same method for establishing height is used.
So, really this is not a "perfect" way to measure anything, including the accuracy of a DEM.

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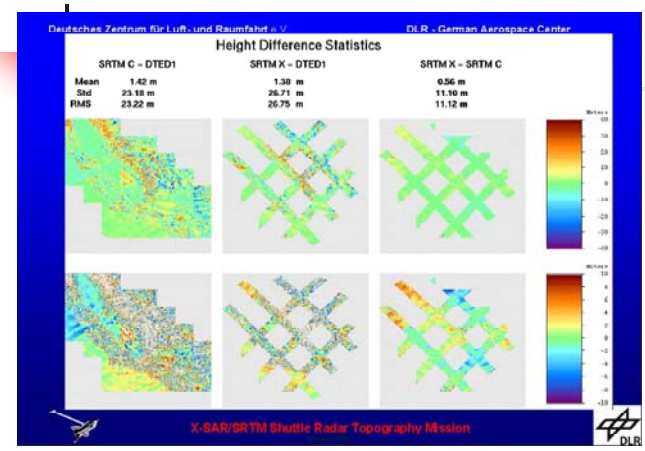
How is the accuracy of a DEM assessed?



A typical accuracy assessment of a DEM

Usually by showing an array of discrepancies:

d = *assessed DEM – reference DEM*

and

some derivatives such as min/max(d), mean(d), STD(d), histogram, etc

This approach dependents on the type of terrain, e.g.
Different results will be achieved over different types of terrain, even if the same heighting method was used.

Other method: pixel-wise accuracy assessment

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[Becek, 2008, *GRL*, doi:10.1029/2008GL034592]

$$\sigma^2_{DEM} = \sigma^2_{instrument} + \sigma^2_{terrain} + \sigma^2_{other}$$

Term 1 is the instrumental component (errors due to the heighting method;)

Term 3 represents errors due to other factors, i.e. environment, etc.

Variance of Round-off Error

$$\sigma^2_{terrain} = \frac{q^2}{12}$$

where q is the pixel size. In the case of a topographic map q is equivalent to the contour interval.
For example, let q = 1m then $\sigma = \pm 0.29$m

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Thank you and please visit Brunei Darussalam!

Nepenthes L.