Subject: Re: difference between DEM and DSM
Posted by Mort Canty on Fri, 30 Jul 2010 17:43:47 GMT
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Am 30.07.2010 16:52, schrieb skymaxwell@gmail.com:
> Good day !
>
>
> I want create digital elevation model (DEM) and digital surface
> model(DSM) by IDL.
> I know how to do DEM, but how build DSM ?
> What data required to build it and what theory ? Any links to read
> about this subject will appreciate.
>
>
> Thanks
>

Wikipedia?

A digital elevation model - also sometimes called a digital terrain model (DTM) - generally refers to a representation of the Earth's surface (or subset of this), excluding features such as vegetation, buildings, bridges, etc. The DEM often comprises much of the raw dataset, which may have been acquired through techniques such as photogrammetry, LiDAR, IfSAR, land surveying, etc. A digital surface model (DSM) on the other hand includes buildings, vegetation, and roads, as well as natural terrain features. The DEM provides a so-called bare-earth model, devoid of landscape features. While a DSM may be useful for landscape modeling, city modeling and visualization applications, a DEM is often required for flood or drainage modeling, land-use studies, geological applications, and much more.

Subject: Re: difference between DEM and DSM
Posted by Ben Kamphaus on Fri, 30 Jul 2010 17:52:30 GMT
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Yeah, the DSM is the easy one if you're working with a LiDAR point cloud, for example. To create the DSM you'll just interpolate the elevation values at each point to a grid. The DEM/DTM extraction (also called bare earth extraction) requires some sort of morphological filtering process to be applied to either the DSM or the point cloud. If the filter operates on the DSM, it removes outlier / feature values and replaces them with interpolated values to preserve the morphology of the ground values. If the filter operates on the point cloud, it will sort the points into ground and non-ground then a separate interpolated grid will be calculated from only the ground

points.

On Jul 30, 11:43 am, Mort Canty <m.ca...@fz-juelich.de> wrote:
> Am 30.07.2010 16:52, schrieb skymaxw...@gmail.com:
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Subject: Re: difference between DEM and DSM
Posted by skymaxwell@gmail.com on Fri, 30 Jul 2010 20:46:17 GMT
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i was looking in Wikipedia, but there is very brief information about
DSM.

i haven't any LIDAR data so there is no point cloud. I have only high
resolution panchromatic satellite images.

so, to create DSM
i must interpolate the elevation values (for example from DEM) at each
point (each pixel) to a grid ?
how define size of grid ?

Where i can see more details about creating DSM ?

Thanks

Subject: Re: difference between DEM and DSM
Posted by Klemen on Sun, 01 Aug 2010 09:00:47 GMT
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On Jul 30, 10:46 pm, "skymaxw...@gmail.com" <skymaxw...@gmail.com>
wrote:
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> Where i can see more details about creating DSM ?
>
> Thanks

Hi, perhaps this is not the right forum to ask such a question. This
is not an IDL issue at all.

However, to generate a DSM, you need data with surface elevation. A
source might be even panchromatic satellite images but then would be
better to use a photogrametric software to generate a DSM. The size of
grid depends on the resolution of your data - use simply the same as
input.

You probably won't find many details on DSM creation, because most are
interested into DEM creation.

Cheers, Klemen