
Subject: Re: Using "tie points" in rasters

Posted by [jiashenyue](#) on Thu, 12 May 2016 03:21:30 GMT

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On Wednesday, May 11, 2016 at 2:35:04 PM UTC-7, GB wrote:

> Hello,

>

> I am working with a digital elevation map raster and ran into a problem that I am unsure how to approach.

>

> Once I get the spatial reference object of my DEM raster, I then get the tie_point_pixel, the tie_point_map, and pixel_size from the spatialref. I then seek to transform the map coordinates of a set of LiDAR points into the pixel indices of my raster. The thing I am confused about is how rounding plays into this problem.

>

> For instance, lets say that I use the following function to convert the x-coordinate of my lidar point into pixel coordinates:

> $(\text{lidar_point_x} - \text{tie_point_map}[0]) / \text{pixel_size}[0]$

> But, I get a decimal place in the outcome. Lets say that the decimal point is 0.64. Would this decimal point translate into the point belonging to index 0 or to index 1?

>

> I suppose I am confused about if the tie_point_map is centered on the tie_point_pixel such that it extends a range of $-0.5 * \text{pixel_size}$ to $0.5 * \text{pixel_size}$. If anyone could elaborate on this I would be very thankful.

Usually I just round the decimal points to the closest pixel. If I got a index of 1.64, I go for 2. I would say this is quite fair, since in this case, the pixel you are trying to locate is closer to the next pixel.

Shenyue
