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Subject: similarity of two images, identifying overlapping regions

Posted by [Thomas Nehls](#) on Wed, 18 Jul 2007 10:52:37 GMT

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Hi there,

the case: There are two different images from X-Ray imagery showing both parts, but not exactly the same, of a soil sample. The two images were taken with different wavelengths L1 and L2, showing the distribution of different elements.

The purpose is to calculate with these element distributions later.

Because the images show not the same part of the sample, a second wavelength L3 was detected both times parallel to the different wavelengths(L1+L3 and then L2+L3), showing the distribution of iron in the soil sample.

By the Iron images, we have a reference. Based on the Iron reference, the overlapping image regions should be identified.

Now the problem: it is not clear, whether one of the iron images is distorted compared to the other.

Furthermore, the two Iron images do not look completely similar. That means I need to write a routine, in which I can find the best fit of the two images in order to see whether there is a distortion or not.

I thought about holding one of the images and moving the other before the first row by row, then column by column (like the doctors do it on the light screen with the photographs of our bones or brains :-)

Then I would collect the sum of squared distance of the individual pixels in the two images and see, which position of the second image fits best. If the error function has two minima, there is a distortion...

May be such a routine already exists?

Thanks in advance

Thomas

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