Subject: 3-D-representation of heights
Posted by Achim Hein on Wed, 04 Jun 1997 07:00:00 GMT
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Hi,

I am looking for information or software to represent two images, one
contains the amplitude information and the other 2-d-array contains the
height information, that form you can see the the height image as
'really pseudo' height image.
What I want to see is an height image coded with green and red to notice
the image like a real height model i.e. made by plaster. Therefore both
colors have to represent the both eyes arranged in spherical geometry to
get the pseudo 3-D effect. With a pair of glasses, one glass in red and
the other glass in green you could see this 3-D effect.
In 'former' times there were comics named Y'ps (if I remeber right)
where you can see pictures representing the 3-d effect.

Has anyone made such a representation using an height and an amplitude
image?

Cheeers

Achim
--

_____

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Please have a look at our Web-Sites:

http://www.nv.et-inf.uni-siegen.de/pb2/www_pb2

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Subject: Re: 3-D-representation of heights
Posted by Robert Smith on Wed, 04 Jun 1997 07:00:00 GMT
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Achim Hein wrote:
>

> Hi,
>
> I am looking for information or software to represent two images, one
> contains the amplitude information and the other 2-d-array contains the

Achim:
 The red-green technique you refer to is called anaglyph, and is
the cheapest (tho not the best) way of making 3-d images. I'm not aware
of any "canned" programs for generating stereo pairs from the kind of
images you describe, but typically the program to convert any sort of
3-d coordinate representation to stereo is less than a page of code.
Try drawing the situation (seen from the top) with the 2 eyes observing
different views of an arbitrary point hovering above a background (X,Z
only, Y is invariant in stereo pairs). The trigonometry for determining
where to put that point on the two images is straightforward. There are
2 tricks: start by placing the points in order of farthest away first,
that way the nearer points which occlude farther points will write over
them and you basically don't have to do any occlusion calculations; 2nd
when you're done, scan the images for any missing points (whenever 2
points on the original image wind up in the same pixel in one of the
final images, then there will be an empty pixel somewhare else. Fill
these by interpolating in the X direction.
 That's basically it. I've written this algorithm numerous times
for various applications, and it's not hard. If you get stuck, e-mail
me.
 Incidentally, if this is for a high-end application, you might
consider using lcd shutter glasses in place of anaglyph. These
basically allow each eye to see only alternate frames of a video
display, so you can put right- and left-eye images in alternate frames.
 The advantage is full color images; the disadvantage is spending
several hundred dollars per viewer.

Good luck

Bob


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   / \
  /   \
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Subject: Re: 3-D-representation of heights

Posted by krol j.j. on Thu, 05 Jun 1997 07:00:00 GMT

Achim Hein wrote:

>

> Hi,

>

> I am looking for information or software to represent two images, one

> contains the amplitude information and the other 2-d-array contains the

You also could convert the 2d array to Targa or Gif and feed that to

Povray as a heightfield. The result is an image which looks similar to

a phot of a mountainous area.

Take a look at www.povray.org for the raytracer and mail me if you

want examples.

Jan Jitze Krol

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These are my principles. If you don't like them, I have others. (G.Marx)

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Subject: Re: 3-D-representation of heights
Posted by Achim Hein on Fri, 06 Jun 1997 07:00:00 GMT

Achim Hein wrote:

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> Hi,

>

> I am looking for information or software to represent two images, one

> contains the amplitude information and the other 2-d-array contains the

> height information, that form you can see the the height image as

> 'really pseudo' height image.

> What I want to see is an height image coded with green and red to notice

> the image like a real height model i.e. made by plaster. Therefore both

> colors have to represent the both eyes arranged in spherical geometry to

> get the pseudo 3-D effect. With a pair of glasses, one glass in red and

> the other glass in green you could see this 3-D effect.

> In 'former' times there were comics named Y'ps (if I remeber right)

> where you can see pictures representing the 3-d effect.

>

> Has anyone made such a representation using an height and an amplitude

> image?

>

I have got some very interesting and helpful answers especially one of
Richard Horn:
<Try 3DEM50 at
<http://www.winsite.com/info/pc/win95/desktop/3dem50.zip/. This
<program will produce red-blue 3D projections of terrain from DEM
<files. You can view these images with red-blue 3D glasses.
<3DEM50 will also produce color 3D projections, mpeg terrain flybys
<and much more.

Now I have another question. Coming up to GIS Software we have to create
DEM-Files. I believe that's quite the same as surface plots but I don't
know the file format and how to create and/or export theses DEM-Files in
IDL.

Is there any experience?

Thanks

Achim

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