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How to build a world with real image as ground plane

I want to simulate a world where its ground has special pattern. I decided to make a image file use Photoshop, and put this image into gazebo world as ground plane.

Can anyone tell me how to do this?

Thanks a lot!

add a comment

asked Oct 17 '13
Paul
31 ●1 ●2 ●3

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|	
Asked:	**Oct 17 '13**
Seen:	**12,694 times**
Last updated:	**May 15 '18**

3 Answers

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4

Update: Also check out this tutorial.

You can create a material script, and then use that material script on a ground plane.

1. Create a new model directory:

   mkdir ~/.gazebo/models/my_ground_plane

2. Create the materials directories:

   mdkir -p ~/.gazebo/models/my_ground_plane/materials/textures mdkir -p ~/.gazebo/models/my_ground_plane/materials/scripts

3. Create your material script file `~/.gazebo/models/my_ground_plane/materials/scripts/my_ground_plane.material` with the following contents:

```
material MyGroundPlane/Image
{
  technique
  {
    pass
    {
      ambient 0.5 0.5 0.5 1.0
      diffuse 1.0 1.0 1.0 1.0
      specular 0.0 0.0 0.0 1.0 0.5

      texture_unit
      {
        texture MyImage.png
        filtering trilinear
      }
    }
  }
}
```

1. Copy your image to `~/.gazebo/models/my_ground_plane/materials/textures/MyImage.png`

2. Create a `~/.gazebo/models/my_ground_plane/model.sdf` file with the following contents

```
<?xml version="1.0"?>
<sdf version="1.4">
<model name="my_ground_plane">
  <static>true</static>
    <link name="link">
```

answered Oct 17 '13
nkoenig
7468 ●8 ●43 ●69
http://gazebosim.org/

updated Apr 3 '18

```
        <plane>
          <normal>0 0 1</normal>
          <size>100 100</size>
        </plane>
      </geometry>
      <surface>
        <friction>
          <ode>
            <mu>100</mu>
            <mu2>50</mu2>
          </ode>
        </friction>
      </surface>
    </collision>
    <visual name="visual">
      <cast_shadows>false</cast_shadows>
      <geometry>
        <plane>
          <normal>0 0 1</normal>
          <size>100 100</size>
        </plane>
      </geometry>
      <material>
        <script>
          <uri>model://my_ground_plane/materials/scripts/my_ground_plane.material</uri>
          <name>MyGroundPlane/Image</name>
        </script>
      </material>
    </visual>
  </link>
  </model>
</sdf>
```

3. Create a `~/.gazebo/models/my_ground_plane/model.config` file with the following contents

<model> <name>My Ground Plane</name> <version>1.0</version> <sdf version="1.4">model.sdf</sdf>

```
<description>
  My textured ground plane.
</description>
```

</model>

4. In your world SDF file, use your ground plane like so:

```
<include>
  <uri>model://my_ground_plane</uri>
</include>
```

Comments   link

Thank you so much for this detailed and concise reply!
Paul (**Oct 18 '13**)

Hi nkoenig, can you tell me how to find the documentation of material. I don't know the meaning of
ambient, diffuse and specular
Paul (**Oct 18 '13**)

I found a bug in your post
Paul (**Oct 18 '13**)

I found a bug in your post
Paul (**Oct 18 '13**)

add a comment

0   <material> <script>
<uri>model://mygroundplane/materials/scripts/my_ground_plane.material</uri>
<name>MyGroundPlane/Image</name> </script> </material>

There is a small bug.

answered Oct 17 '16
Arjun S Kumar
1

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excuse me , what do you mean by '4- In your world SDF file, use your ground plane like so:' . do you mean the file model.sdf? if so is there any specific location to put that : <include> <uri>model://my_ground_plane</uri> </include> every time i try to load the resulted model gazebo freezes and exit .

Caesar84 (**Apr 5 '18**)

@Caesar84 I was able to place the image on the ground plane without the step 4 - including include
spacewandererer (**May 1 '18**)

add a comment

0

nkoenig's answer worked for me. But there wasn't any need for step 4 - Use ground plane using include tag

I also referred to another question for values of ambient, diffuse, specular ,emissive to ensure no squishing of image. Also used the fix mentioned in the answer.

answered May 1 '18
spacewandererer
1 ●1 ●1

updated May 16 '18

Steps that worked for me:

1. Create a new model directory:

   mkdir ~/.gazebo/models/my_ground_plane

2. Create the materials directories:

   mdkir -p ~/.gazebo/models/my_ground_plane/materials/textures
   mdkir -p ~/.gazebo/models/my_ground_plane/materials/scripts

3. Create your material script file
   ~/.gazebo/models/my_ground_plane/materials/scripts/my_ground_plane.material
   with the following contents:

```
material MyGroundPlane/Image
      {
        technique
        {
          pass
          {
            ambient 1 1 1 1.000000
            diffuse 1 1 1 1.000000
            specular 0.03 0.03 0.03 1.000000

            texture_unit
            {
              texture MyImage.png
            }
          }
        }
      }
```

4.Copy your image to
~/.gazebo/models/my_ground_plane/materials/textures/MyImage.png

5.Create a
~/.gazebo/models/my_ground_plane/model.sdf

file with the following contents:

```
<?xml version="1.0" encoding="UTF-8"?>
<sdf version="1.4">
   <model name="my_ground_plane">
      <static>true</static>
      <link name="link">
         <collision name="collision">
            <geometry>
               <plane>
                  <normal>0 0 1</normal>
                  <size>100 100</size>
               </plane>
            </geometry>
            <surface>
```

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```
            <mu>100</mu>
            <mu2>50</mu2>
          </ode>
        </friction>
      </surface>
    </collision>
    <visual name="visual">
      <cast_shadows>false</cast_shadows>
      <geometry>
        <plane>
          <normal>0 0 1</normal>
          <size>100 100</size>
        </plane>
      </geometry>
      <material>
        <script>
          <uri>model://my_ground_plane/materials/scripts</uri>
          <uri>model://my_ground_plane/materials/textures/</uri>
          <name>MyGroundPlane/Image</name>
        </script>
      </material>
    </visual>
  </link>
  </model>
</sdf>
```

6.Create a
~/.gazebo/models/my_ground_plane/model.config
file with the following contents

```
<?xml version="1.0" encoding="UTF-8"?>
<model>
  <name>My Ground Plane</name>
  <version>1.0</version>
  <sdf version="1.4">model.sdf</sdf>
  <description>My textured ground plane.</description>
</model>
```

7.Files I have created till now:

```
~/.gazebo/models/my_ground_plane/materials/scripts/my_ground_plane.material
~/.gazebo/models/my_ground_plane/materials/textures/MyImage.png
~/.gazebo/models/my_ground_plane/model.config
~/.gazebo/models/my_ground_plane/model.sdf
```

8.Open Gazebo and add my_ground_plane to add the new texture you defined to the Gazebo ground plane

9.If your floor comes up blinking grey when you insert it, it's because it's z-fighting with the default ground_plane, just delete the ground plane and that should be fine.

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