

## &lt;&lt;Data format (ASCII)&gt;&gt;

#/SPBR\_ASCII\_Data

#/NumParticles num (optional)

... The #/NumParticles command is optional in ASCII data

... Other commands (see below)

#/EndHeader

x y z nx ny nz [R\_byte G\_byte B\_byte]

x y z nx ny nz [R\_byte G\_byte B\_byte]

...

## &lt;&lt;Data format (Binary)&gt;&gt;

#/SPBR\_Binary\_Data

#/NumParticles 100000 num

... The #/NumParticles command must be described in binary data

... Other commands (see below)

#/EndHeader

x y z nx ny nz R\_byte G\_byte B\_byte

x y z nx ny nz R\_byte G\_byte B\_byte

...

## &lt;&lt;Commands&gt;&gt;

#/BaseVector e1.x e1.y e1.z e2.x e2.y e2.z

\* Rotation (Set body-coord base vectors in world coord.)

#/BGColorRGBByte (uByte r) (uByte g) (uByte b)

#/BoundingBox xmin ymin zmin xmax ymax zmax

#/CameraFar 1 or 0 (default: 0)

\* On/off of very-far camera setting

#/CameraPosition (float x) (float y) (float z) (default: (0,0,12))

#/CameraZoom (zoom\_factor f) (default: 1.0)

#/ColorRGB (double r) (double g) (double b)

#/ColorRGBByte (uByte r) (uByte g) (uByte b)

#/EndHeader

\* End of the header region

`#/ForcedShuffle 1 or 0 (default is 0)`

\* Additional shuffle after reading data

`#/FPS 1 or 0 (default: 0)`

\* On/off of displaying FPS on screen

`#/ImageResolution (uint size) (default: 512)`

`#/LambertShading [kd ka] (default: 0.6 0.4)`

`#/LOD 1 or 0 (on/off of LOD (default: 1))`

`#/LookAt (float x) (float y) (float z) (default: (0,0,0))`

`#/NumParticles num`

\* This command makes sense if `#/EndHeader` command is used together

`#/ObjectZXRotation zrot_angle_deg xrot_angle_deg`

`#/Origin x y z`

\* Translation (x, y, z)

`#/OrthogonalCamera`

\* Use orthogonal projection for camera

`#/ParticleZoom 1 or 0 (default: 1)`

\* On/off of particle zoom

`#/PerspectiveCamera`

\* Use perspective projection for camera (default setting is ON))

`#/PhongShading [kd ka ks shininess] (default: 0.5 0.3 0.8 100)`

`#/PointSize (uint size)`

\* Available with `-opaque` option

`#/RepeatLevel (uint size) (default: 1)`

`#/ReverseNormals 1 or 0 (default: 0)`

`#/SPBR_ASCII_Data`

\* Beginning of the header region

`#/Shading 1 or 0 (default: 1)`

\* On/off of shading

\* The default shading type is Lambert.

Use `#/LambertShading` or `#/PhongShading` for detailed tuning.

`#/Shuffle 1 or 0 (default: 1)`

\* On/off of particle shuffling by a renderer

`#/ForcedDefaultCamera 1/0 (default 0)`

\* All camera setting is initialized.

`#/ViewAngle (float angle_deg) (default: 45.0)`

`#/WireframeBox xmin ymin zmin xmax ymax zmax`

\* z=zmin: red, z=zmax: blue, z-parallel: green