NAME

genklemsamp - generate ray samples over surfaces using Klems BSDF basis

SYNOPSIS

genklemsamp [**−c N**][**−f{a|f|d}**] [**view opts**] [**geom.rad ..**]

DESCRIPTION

Genklemsamp generates ray origins and directions to sample planar surfaces needed to determine incident radiances or daylight coefficients. This command is typically used in conjunction with *rcontrib(1)* to analyze exterior daylight coefficients for an annual simulation.

The view options are needed to specify (at minimum) the view direction, which corresponds to the orientation of the surfaces, and the view up vector, which corresponds to the azimuth=90-degree position on the Klems sampling hemisphere. The view fore clipping distance is also quite useful, as it provides a means to pass through some thickness in a fenestration system before samples are sent out. Other view options such as the view type and aft clipping distance are overridden or ignored.

If no Radiance scene files are provided, then the specified parallel view defines the width, height, center, and orientation of the window or facade of interest. If one or more scene files are given, they are presumed to contain planar surfaces over which *genklemsamp* will originate samples. The sampled surface normals must correspond to the specified view direction, and unaligned surfaces are silently ignored.

The −c option specifies the number of rays to sample per Klems direction. These samples will be distributed evenly over the surface(s). The default setting is 1000.

The −ff option specifies that output rays should be generated as 32-bit IEEE binary float values. This may be more efficient if passed directly to *rcontrib* or *rtrace(1)* with the same option. Likewise, the −fd option specifies 64-bit IEEE binary double values. The default setting of −fa produces ASCII floating point values.

EXAMPLE

To generate 500 samples per direction over a set of south-facing windows and pass to *rcontrib* to compute daylight coefficients in a matrix:

genklemsamp -c 500 -vd 0 -1 0 -vu 0 0 1 south_windows.rad | rcontrib -c 500 -e MF:1 -f reinhart.cal -b rbin -bn Nrbins exterior.oct > Dsouth.dat

AUTHOR

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SEE ALSO

dctimestep(1), genBSDF(1), genskyvec(1), mkillum(1), rcontrib(1), rtrace(1), vwrays(1)