NAME

genskyvec - compute patch radiance averages for a specific sky

SYNOPSIS

genskyvec [**−h**][**−m N**][**−c r g b**][**−d**]

DESCRIPTION

Genskyvec samples the *Radinace* sky description given on the standard input to generate a list of average patch radiances. If there is a sun in the description, *genskyvec* will include its contribution in the three nearest sky patches, distributing energy according to centroid proximity.

By default, *genskyvec* divides the sky into 2305 patches, plus one patch for the ground. This corresponds to Reinhart's extension of the Tregenza sky, where the original 145 patches are subdivided into 16 subpatches, except at the zenith. A different subdivision may be specified via the *−m* option. The value given will be used to subdivide each dimension, so the default of 4 yields almost 16 times as many patches as the original Tregenza sky, which can be specified with *−m 1*. A higher resolution sky is generally better for daylight coefficient analysis where solar position is important.

The *−c* option may be used to specify a color for the sky. The gray value should equal 1 for proper energy balance The default sky color is *−c 0.960 1.004 1.118* .

The *−d* option may be used to produce a sun-only vector, with no sky contributions. If a time of day is selected or sky type that has no sun, then a zero vector is produced.

Normally, a header will be produced containing the number of rows and other information required by *dctimestep(1)*. The *−h* option may be used to elide this information header, producing data values only.

EXAMPLE

To generate 578 patches corresponding to a 2x2 subdivision of the Tregenza sky on a sunny equinox noon:

    gensky 9 21 12 | genskyvec -m 2 > sky09_21_12.dat

AUTHOR

Greg Ward

SEE ALSO

dctimestep(1), genBSDF(1), gendaylit(1), gendaymtx(1), gensky(1), rcollate(1), rcomb(1), rcontrib(1), rmtxop(1), rtrace(1)