

Holographic database by ERC INTERFERE

Data structure of CGH_(name).mat files

CGH.

name : name of hologram

Hol : hologram i.e. the wavefield, might have 3 channels if color hologram

time : computation time of the cgh [seconds]

zrec : suggested reconstruction distance (from the hologram plane)

zrange : depth range of the scene

setup. [Parameters of the holographic setup considered]

res : the resolution, i.e number of pixels in the hologram in horizontal and vertical direction

pp : the pixel pitch or sampling pitch in horizontal and vertical direction

wlen : the wavelength(s) (for each color channel –if color cgh)

color : number of color channels [1:monochromatic, 3:colour hologram]

parallax : 1: HPO (horizontal parallax only, 2:Full parallax]

surSpe : 1: specular hologram, i.e. LUT with 0: else

surDif : 1: diffuse hologram i.e LUT with random phase added to the intensity of each point, 0: else

iPhong : 1: cgh with LUTs that implement the Phong illumination model

params. [Parameters of the CGH method used]

WRPlevels : depths of the wavefront recording planes (WRPs)

mWRP : number of WRPs

QL: number of look-up-table depth levels

nlut : number of diffuse LUTs with different random phase patterns

occDim : size of the occlusion mask e.g. 11 means 11-by-11 2D mask

sigma : variance of the gaussian distribution 2D point profile

SAQ : number of angle levels for the generation of the specular reflections LUTs

L. : light sources properties

N : normal of the light direction

C : color of the light source

Att : constant, linear and quadratic attenuation, if 1 no attenuation

Cut : Cutoff angle, for directional or omnidirectional light source AND glossiness

DSA : weight of diffuse, specular and ambient component, if 1 not weighted

Data structure of PC_(name).mat files

PC.

XYZ : X Y Z coordinates of the points

N : Normal vector of each point

I : Intensity of the points

C : Texture/Color of each point denoted from 0 to 1 for the R(GB) channels

K : surface reflectance parameters per color per point

NP : number of points

XL : range in horizontal direction, minimum and maximum X coordinates

YL : range in vertical direction, minimum and maximum Y coordinates

ZL : range in depth, minimum and maximum Z coordinates

For more information contact:

Athanasia Symeonidou asymeoni@etrovub.be [athanasia.sym@gmail.com] & Peter Schelkens pschelke@etrovub.be