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Evaluate Tabulated Scattering vs HG

In this example, we will show how to build tabulated scatter in 2D and 3D and compare the evaluated scattering in single scattering case

```
% first build the target area for 2D and 3D
% we make very tiny box, in order to demonstrate the pdf
boxTargetArea2D = boxArea( ...
    1 ,      ... wavelength
    200,     ... MFP
    [-5,5], ... z
    [-5,5]  ... x
);

boxTargetArea3D = boxArea( ...
    1 ,      ... wavelength
    200,     ... MFP
    [-5,5], ... z
    [-5,5], ... x
    [-5,5]  ... y
);

% and the lighting and views
viewDirections = 0:1:360; % in deg
views = farFieldSource(deg2rad(viewDirections),0);
lights = farFieldSource(0,0); % light in 0 deg direction

% the g parameter we comapre with
gParam = 0.7;

% the 2D direction vector MUST being with 0 and end with 2*pi
directions2D = (0:1e-4:1) * 2 * pi;
hg2Damplitude = sqrt(evaluateHG(directions2D, gParam, 0, 2));

figure
polarplot(directions2D,hg2Damplitude.^2);

title('Target HG function')
```
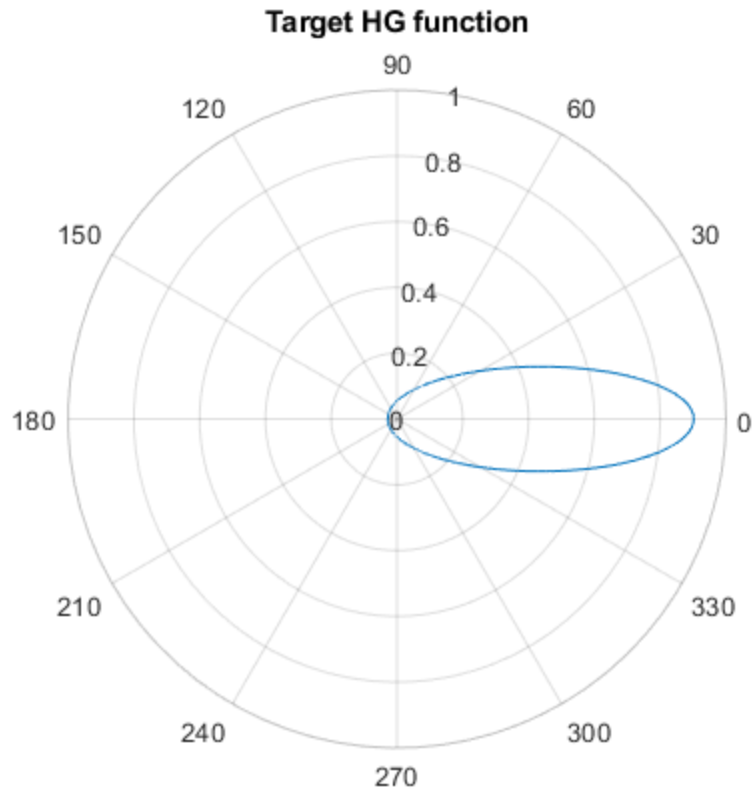
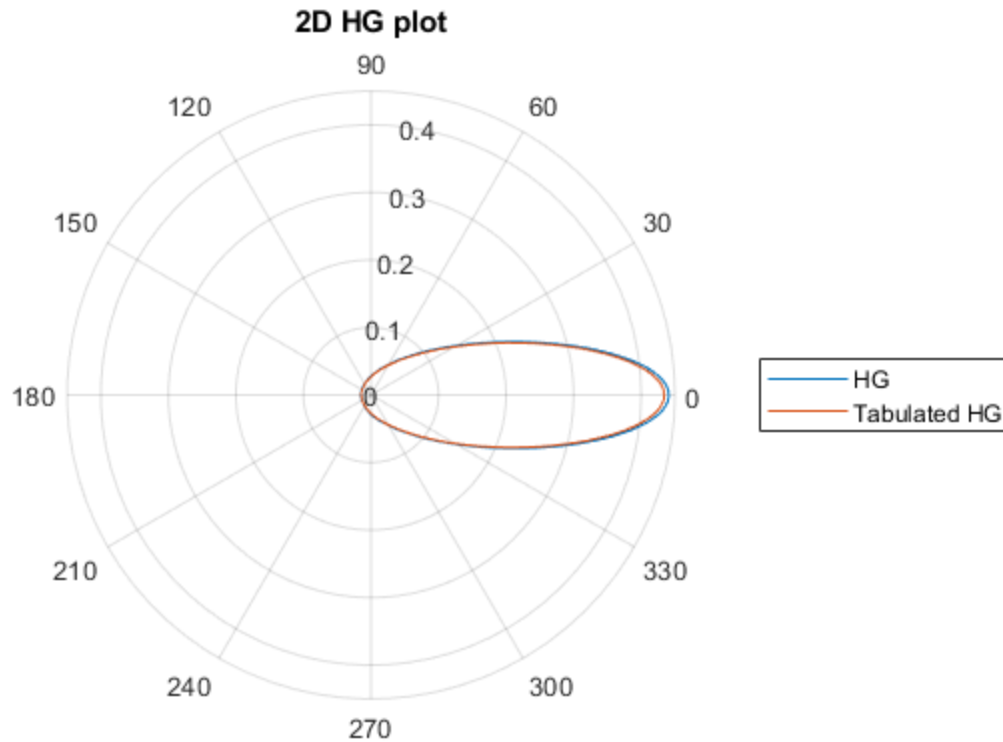**Target HG function**

Build 2D tabulated HG function

```matlab
% solve for both tabulated and HG
tic
hgRes = scmc(boxTargetArea2D, views, lights, HGScatter(gParam), 1e3);
toc

tic
tabRes = scmc(boxTargetArea2D, views, lights, ...
    tabulatedAmplitudeScatter(directions2D,hg2Damplitude), 1e3);
toc

% plot the intensity of both results
figure
polarplot(deg2rad(viewDirections),diag(abs(hgRes.C)));
hold on
polarplot(deg2rad(viewDirections),diag(abs(tabRes.C)));

legend('HG','Tabulated HG');
title('2D HG plot')

Elapsed time is 3.796396 seconds.
Elapsed time is 3.985496 seconds.
```

2D HG plot

Build 3D tabulated HG function

```matlab
% the 3D direction vector MUST being with 0 and end with pi, theta is
 the
% elevation direction
cosThetaVals3D = (0:1e-4:1) * pi;
hg3Damplitude = sqrt(evaluateHG(cosThetaVals3D, gParam, 0, 3));

% solve for both tabulated and HG
tic
hgRes = scmc(boxTargetArea3D, views, lights, HGScatter(gParam), 1e3);
toc

tic
tabRes = scmc(boxTargetArea3D, views, lights, ...
    tabulatedAmplitudeScatter(cosThetaVals3D,hg3Damplitude), 1e3);
toc

% plot the intensity of both results
figure
polarplot(deg2rad(viewDirections),diag(abs(hgRes.C)));
hold on
polarplot(deg2rad(viewDirections),diag(abs(tabRes.C)));

legend('HG','Tabulated HG');
```
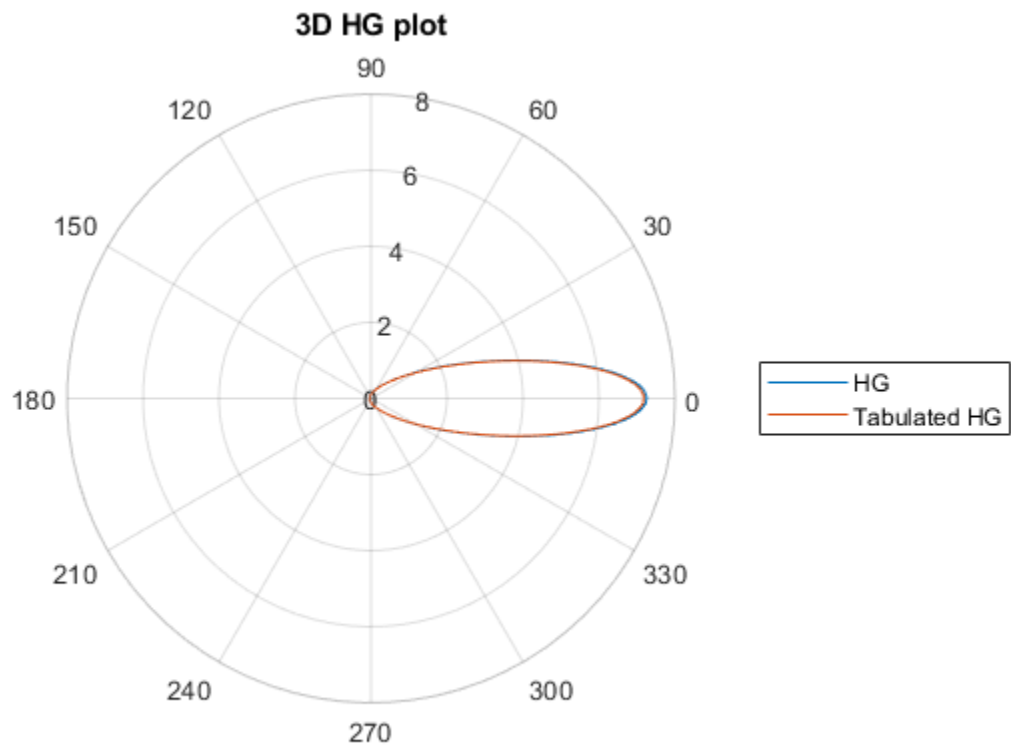
```
title('3D HG plot')
```

Elapsed time is 3.529250 seconds.
Elapsed time is 3.750523 seconds.

3D HG plot

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