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Build far field covariance matrix

```
% Build the target area
boxTargetArea = boxArea( ...
    1 ,          ... wavelength
    10,          ... MFP (O.D. = 2)
    [-10,10],   ... z
    [-10,10]    ... x
);

% views config, near field sensors, sensors located in a circle around
the
% target area
viewsDirections = 0:1:359;
sensorsRadius = 20;
views = nearFieldSource(sensorsRadius, deg2rad(viewsDirections));

% lights config, lighting in some directions
lightsDirections = [0, 1, 4, 20];
lights = farFieldSource(deg2rad(lightsDirections),0);

% scatter config
% use Henyey-Greenstein scattering function
load('scatteringAmplitude.mat', 'theta', 'farField')
scatter = HGScatter(-0.5);
```

Solve scmc with CBS

```
tic
CBSres =
    scmc(boxTargetArea,views,lights,scatter,1e3,'CBS',true,'parforIters',12);
toc

Elapsed time is 621.599143 seconds.
```

Solve scmc without CBS

```
tic
NCBSres =
    scmc(boxTargetArea,views,lights,scatter,1e3,'CBS',false,'parforIters',12);
toc

Elapsed time is 384.012653 seconds.
```

Compare cov matrix

```
f = figure;
f.Position = [0,0,1200,700];
maxval = max(abs([CBSres.C(:);NCBSres.C(:)]));

subplot(2,4,1);
imagesc(viewsDirections,viewsDirections,abs(CBSres.C(:, :, 1, 1)),
[0,maxval]);
xlabel('view[deg]');
ylabel({'CBS', 'view[deg]'});
title(['(', num2str(lightsDirections(1)), '\circ, ', num2str(lightsDirections(1)), '\ci

subplot(2,4,2);
imagesc(viewsDirections,viewsDirections,abs(CBSres.C(:, :, 1, 2)),
[0,maxval]);
xlabel('view[deg]');
ylabel('view[deg]');
title(['(', num2str(lightsDirections(1)), '\circ, ', num2str(lightsDirections(2)), '\ci

subplot(2,4,3);
imagesc(viewsDirections,viewsDirections,abs(CBSres.C(:, :, 1, 3)),
[0,maxval]);
xlabel('view[deg]');
ylabel('view[deg]');
title(['(', num2str(lightsDirections(1)), '\circ, ', num2str(lightsDirections(3)), '\ci

subplot(2,4,4);
imagesc(viewsDirections,viewsDirections,abs(CBSres.C(:, :, 1, 4)),
[0,maxval]);
xlabel('view[deg]');
ylabel('view[deg]');
title(['(', num2str(lightsDirections(1)), '\circ, ', num2str(lightsDirections(4)), '\ci

subplot(2,4,5);
imagesc(viewsDirections,viewsDirections,abs(NCBSres.C(:, :, 1, 1)),
[0,maxval]);
xlabel('view[deg]');
ylabel({'Without CBS', 'view[deg]'});

subplot(2,4,6);
imagesc(viewsDirections,viewsDirections,abs(NCBSres.C(:, :, 1, 2)),
[0,maxval]);
xlabel('view[deg]');
ylabel('view[deg]');

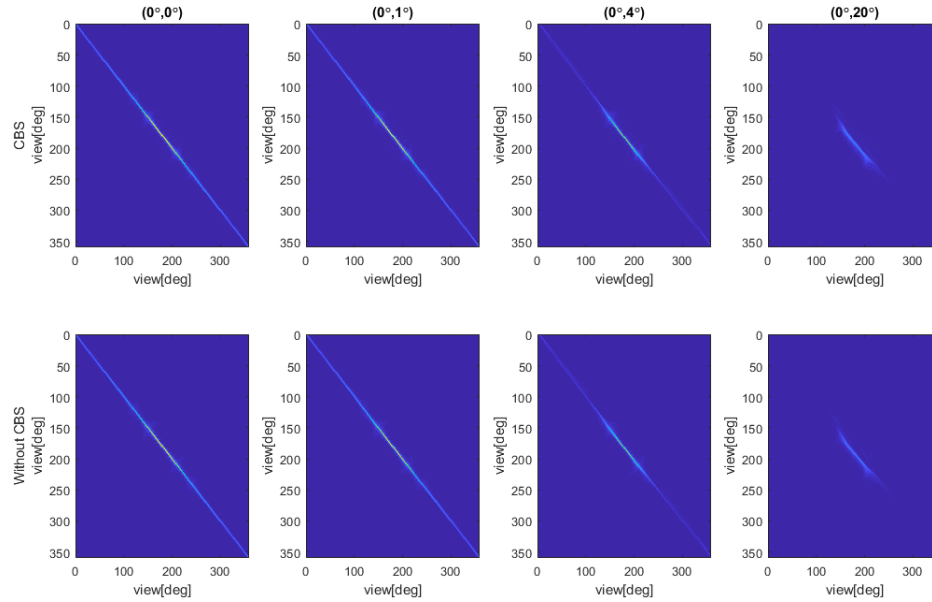
subplot(2,4,7);
imagesc(viewsDirections,viewsDirections,abs(NCBSres.C(:, :, 1, 3)),
[0,maxval]);
xlabel('view[deg]');
ylabel('view[deg]');

subplot(2,4,8);
```

```

imagesc(viewsDirections,viewsDirections,abs(NCBSres.C(:, :, 1, 4)),
[0,maxval]);
xlabel('view[deg]');
ylabel('view[deg]');

```



Compare diagonals

```

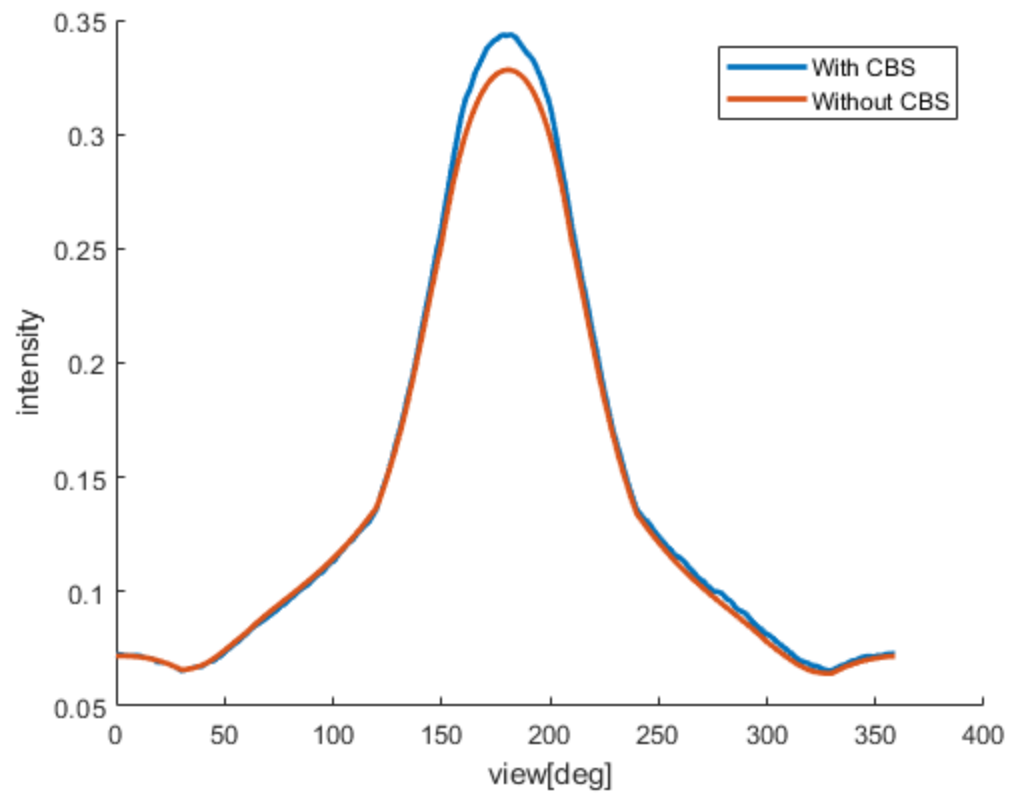
figure

hold on
plot(viewsDirections,diag(abs(CBSres.C(:, :, 1, 1))), 'lineWidth', 2);
plot(viewsDirections,diag(abs(NCBSres.C(:, :, 1, 1))), 'lineWidth', 2);

xlabel('view[deg]');
ylabel('intensity');

legend('With CBS','Without CBS')

```



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