

Function to create spherical region of interest

By: Karthik Chellamuthu and Michael Mow

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% Inputs:
% dims    : 3-vector containing the dimensions of the image
% center  : 3-vector containing the location of the center of sphere
% radius  : radius of sphere

% Output:
% s       : image containing a spherical region of interest

function s = ROI_generator(dims,center,radius)

[x,y,z] = meshgrid(1:dims(1),1:dims(2),1:dims(3));
distFromCenter = sqrt((x-center(2)).^2+(y-center(1)).^2+(z-center(3)).^2);
s = distFromCenter<=radius;
s = double(s);

end
```