

```

1 function [M_comp] = compressionCOL1(M_in, n)
2 %This function requires an input M_in with 5 columns: z,r,Theta,MC,GC and n
3 %defining the number of slices that M_in will be turned into. This function
4 %defines n+1 increments of equal distance along the z axis between the max
5 %and min z value, then makes n Matrices with the points inbetween these
6 %increments (z-Slices) and stores them in a cell array.
7
8 %Sort by z
9 M0 = sortrows(M_in, 1);
10
11
12
13 %Define z range
14 PCTop = max(M0(:, 1));
15 PCbot = min(M0(:, 1));
16
17 % Define Slice increments in z range
18 Slicematrix = linspace(PCbot, PCTop, n+1);
19
20 % Initialize Cell Array
21 M_comp = cell(n, 1);
22
23 % Loop over Slices
24 for h = 1:n
25     % Define Borders of each slice
26     lowerheight = Slicematrix(h);
27     upperheight = Slicematrix(h+1);
28
29     %Find indices of all Points within these borders
30     sliceindices = M0(:, 1) >= lowerheight & M0(:, 1) <= upperheight;
31
32     % Collect all Points of this slice
33     M1 = M0(sliceindices, :);
34
35     % Store Points in cell array
36     M_comp{h} = M1;
37 end

```