

```

Clear["Global`*"];
(* Read in the plant ASCII data for a 193 fuel assembly reactor
and plot some slices in 2D and 3D of the power distribution *)
SetDirectory["C:\\Users\\public\\"];
data01 = Import["dat_20110701_030516_s power.tmp", "CSV"];

(* read in the 2D segment data from the power plant's ASCII files *)
GetSegmentData[datas_, seg_] :=
Module[{tabs = Table[0.0, {i, 1, 15}, {j, 1, 15}], len = Length[datas]},
For[h = 0, h < len, h++, tibs = datas[[h + 1]][[1]]; tubs = datas[[h + 1]][[seg + 1]];

If[Length[StringPosition[tibs, "_5 A"]] > 0, tabs[[15]][[5]] = tubs;;];
If[Length[StringPosition[tibs, "_6 A"]] > 0, tabs[[15]][[6]] = tubs;;];
If[Length[StringPosition[tibs, "_7 A"]] > 0, tabs[[15]][[7]] = tubs;;];
If[Length[StringPosition[tibs, "_8 A"]] > 0, tabs[[15]][[8]] = tubs;;];
If[Length[StringPosition[tibs, "_9 A"]] > 0, tabs[[15]][[9]] = tubs;;];
If[Length[StringPosition[tibs, "_10A"]] > 0, tabs[[15]][[10]] = tubs;;];
If[Length[StringPosition[tibs, "_11A"]] > 0, tabs[[15]][[11]] = tubs;;];

If[Length[StringPosition[tibs, "_3 B"]] > 0, tabs[[14]][[3]] = tubs;;];
If[Length[StringPosition[tibs, "_4 B"]] > 0, tabs[[14]][[4]] = tubs;;];
If[Length[StringPosition[tibs, "_5 B"]] > 0, tabs[[14]][[5]] = tubs;;];
If[Length[StringPosition[tibs, "_6 B"]] > 0, tabs[[14]][[6]] = tubs;;];
If[Length[StringPosition[tibs, "_7 B"]] > 0, tabs[[14]][[7]] = tubs;;];
If[Length[StringPosition[tibs, "_8 B"]] > 0, tabs[[14]][[8]] = tubs;;];
If[Length[StringPosition[tibs, "_9 B"]] > 0, tabs[[14]][[9]] = tubs;;];
If[Length[StringPosition[tibs, "_10B"]] > 0, tabs[[14]][[10]] = tubs;;];
If[Length[StringPosition[tibs, "_11B"]] > 0, tabs[[14]][[11]] = tubs;;];
If[Length[StringPosition[tibs, "_12B"]] > 0, tabs[[14]][[12]] = tubs;;];
If[Length[StringPosition[tibs, "_13B"]] > 0, tabs[[14]][[13]] = tubs;;];

If[Length[StringPosition[tibs, "_2 C"]] > 0, tabs[[13]][[2]] = tubs;;];
If[Length[StringPosition[tibs, "_3 C"]] > 0, tabs[[13]][[3]] = tubs;;];
If[Length[StringPosition[tibs, "_4 C"]] > 0, tabs[[13]][[4]] = tubs;;];
If[Length[StringPosition[tibs, "_5 C"]] > 0, tabs[[13]][[5]] = tubs;;];
If[Length[StringPosition[tibs, "_6 C"]] > 0, tabs[[13]][[6]] = tubs;;];
If[Length[StringPosition[tibs, "_7 C"]] > 0, tabs[[13]][[7]] = tubs;;];
If[Length[StringPosition[tibs, "_8 C"]] > 0, tabs[[13]][[8]] = tubs;;];
If[Length[StringPosition[tibs, "_9 C"]] > 0, tabs[[13]][[9]] = tubs;;];
If[Length[StringPosition[tibs, "_10C"]] > 0, tabs[[13]][[10]] = tubs;;];
If[Length[StringPosition[tibs, "_11C"]] > 0, tabs[[13]][[11]] = tubs;;];
If[Length[StringPosition[tibs, "_12C"]] > 0, tabs[[13]][[12]] = tubs;;];
If[Length[StringPosition[tibs, "_13C"]] > 0, tabs[[13]][[13]] = tubs;;];
If[Length[StringPosition[tibs, "_14C"]] > 0, tabs[[13]][[14]] = tubs;;];

If[Length[StringPosition[tibs, "_2 D"]] > 0, tabs[[12]][[2]] = tubs;;];
If[Length[StringPosition[tibs, "_3 D"]] > 0, tabs[[12]][[3]] = tubs;;];
If[Length[StringPosition[tibs, "_4 D"]] > 0, tabs[[12]][[4]] = tubs;;];

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If[Length[StringPosition[tibs, "_5 D"]]>0, tabs[[12]][[5]] = tubs;;
If[Length[StringPosition[tibs, "_6 D"]]>0, tabs[[12]][[6]] = tubs;;
If[Length[StringPosition[tibs, "_7 D"]]>0, tabs[[12]][[7]] = tubs;;
If[Length[StringPosition[tibs, "_8 D"]]>0, tabs[[12]][[8]] = tubs;;
If[Length[StringPosition[tibs, "_9 D"]]>0, tabs[[12]][[9]] = tubs;;
If[Length[StringPosition[tibs, "_10D"]]>0, tabs[[12]][[10]] = tubs;;
If[Length[StringPosition[tibs, "_11D"]]>0, tabs[[12]][[11]] = tubs;;
If[Length[StringPosition[tibs, "_12D"]]>0, tabs[[12]][[12]] = tubs;;
If[Length[StringPosition[tibs, "_13D"]]>0, tabs[[12]][[13]] = tubs;;
If[Length[StringPosition[tibs, "_14D"]]>0, tabs[[12]][[14]] = tubs;;

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If[Length[StringPosition[tibs, "_1 E"]]>0, tabs[[11]][[1]] = tubs;;
If[Length[StringPosition[tibs, "_2 E"]]>0, tabs[[11]][[2]] = tubs;;
If[Length[StringPosition[tibs, "_3 E"]]>0, tabs[[11]][[3]] = tubs;;
If[Length[StringPosition[tibs, "_4 E"]]>0, tabs[[11]][[4]] = tubs;;
If[Length[StringPosition[tibs, "_5 E"]]>0, tabs[[11]][[5]] = tubs;;
If[Length[StringPosition[tibs, "_6 E"]]>0, tabs[[11]][[6]] = tubs;;
If[Length[StringPosition[tibs, "_7 E"]]>0, tabs[[11]][[7]] = tubs;;
If[Length[StringPosition[tibs, "_8 E"]]>0, tabs[[11]][[8]] = tubs;;
If[Length[StringPosition[tibs, "_9 E"]]>0, tabs[[11]][[9]] = tubs;;
If[Length[StringPosition[tibs, "_10E"]]>0, tabs[[11]][[10]] = tubs;;
If[Length[StringPosition[tibs, "_11E"]]>0, tabs[[11]][[11]] = tubs;;
If[Length[StringPosition[tibs, "_12E"]]>0, tabs[[11]][[12]] = tubs;;
If[Length[StringPosition[tibs, "_13E"]]>0, tabs[[11]][[13]] = tubs;;
If[Length[StringPosition[tibs, "_14E"]]>0, tabs[[11]][[14]] = tubs;;
If[Length[StringPosition[tibs, "_15E"]]>0, tabs[[11]][[15]] = tubs;;

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If[Length[StringPosition[tibs, "_1 F"]]>0, tabs[[10]][[1]] = tubs;;
If[Length[StringPosition[tibs, "_2 F"]]>0, tabs[[10]][[2]] = tubs;;
If[Length[StringPosition[tibs, "_3 F"]]>0, tabs[[10]][[3]] = tubs;;
If[Length[StringPosition[tibs, "_4 F"]]>0, tabs[[10]][[4]] = tubs;;
If[Length[StringPosition[tibs, "_5 F"]]>0, tabs[[10]][[5]] = tubs;;
If[Length[StringPosition[tibs, "_6 F"]]>0, tabs[[10]][[6]] = tubs;;
If[Length[StringPosition[tibs, "_7 F"]]>0, tabs[[10]][[7]] = tubs;;
If[Length[StringPosition[tibs, "_8 F"]]>0, tabs[[10]][[8]] = tubs;;
If[Length[StringPosition[tibs, "_9 F"]]>0, tabs[[10]][[9]] = tubs;;
If[Length[StringPosition[tibs, "_10F"]]>0, tabs[[10]][[10]] = tubs;;
If[Length[StringPosition[tibs, "_11F"]]>0, tabs[[10]][[11]] = tubs;;
If[Length[StringPosition[tibs, "_12F"]]>0, tabs[[10]][[12]] = tubs;;
If[Length[StringPosition[tibs, "_13F"]]>0, tabs[[10]][[13]] = tubs;;
If[Length[StringPosition[tibs, "_14F"]]>0, tabs[[10]][[14]] = tubs;;
If[Length[StringPosition[tibs, "_15F"]]>0, tabs[[10]][[15]] = tubs;;

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If[Length[StringPosition[tibs, "_1 G"]]>0, tabs[[9]][[1]] = tubs;;
If[Length[StringPosition[tibs, "_2 G"]]>0, tabs[[9]][[2]] = tubs;;
If[Length[StringPosition[tibs, "_3 G"]]>0, tabs[[9]][[3]] = tubs;;
If[Length[StringPosition[tibs, "_4 G"]]>0, tabs[[9]][[4]] = tubs;;
If[Length[StringPosition[tibs, "_5 G"]]>0, tabs[[9]][[5]] = tubs;;

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If[Length[StringPosition[tibs, "_6 G"]] > 0, tabs[[9]][[6]] = tibs;;  
If[Length[StringPosition[tibs, "_7 G"]] > 0, tabs[[9]][[7]] = tibs;;  
If[Length[StringPosition[tibs, "_8 G"]] > 0, tabs[[9]][[8]] = tibs;;  
If[Length[StringPosition[tibs, "_9 G"]] > 0, tabs[[9]][[9]] = tibs;;  
If[Length[StringPosition[tibs, "_10G"]] > 0, tabs[[9]][[10]] = tibs;;  
If[Length[StringPosition[tibs, "_11G"]] > 0, tabs[[9]][[11]] = tibs;;  
If[Length[StringPosition[tibs, "_12G"]] > 0, tabs[[9]][[12]] = tibs;;  
If[Length[StringPosition[tibs, "_13G"]] > 0, tabs[[9]][[13]] = tibs;;  
If[Length[StringPosition[tibs, "_14G"]] > 0, tabs[[9]][[14]] = tibs;;  
If[Length[StringPosition[tibs, "_15G"]] > 0, tabs[[9]][[15]] = tibs;;
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If[Length[StringPosition[tibs, "_1 H"]] > 0, tabs[[8]][[1]] = tibs;;  
If[Length[StringPosition[tibs, "_2 H"]] > 0, tabs[[8]][[2]] = tibs;;  
If[Length[StringPosition[tibs, "_3 H"]] > 0, tabs[[8]][[3]] = tibs;;  
If[Length[StringPosition[tibs, "_4 H"]] > 0, tabs[[8]][[4]] = tibs;;  
If[Length[StringPosition[tibs, "_5 H"]] > 0, tabs[[8]][[5]] = tibs;;  
If[Length[StringPosition[tibs, "_6 H"]] > 0, tabs[[8]][[6]] = tibs;;  
If[Length[StringPosition[tibs, "_7 H"]] > 0, tabs[[8]][[7]] = tibs;;  
If[Length[StringPosition[tibs, "_8 H"]] > 0, tabs[[8]][[8]] = tibs;;  
If[Length[StringPosition[tibs, "_9 H"]] > 0, tabs[[8]][[9]] = tibs;;  
If[Length[StringPosition[tibs, "_10H"]] > 0, tabs[[8]][[10]] = tibs;;  
If[Length[StringPosition[tibs, "_11H"]] > 0, tabs[[8]][[11]] = tibs;;  
If[Length[StringPosition[tibs, "_12H"]] > 0, tabs[[8]][[12]] = tibs;;  
If[Length[StringPosition[tibs, "_13H"]] > 0, tabs[[8]][[13]] = tibs;;  
If[Length[StringPosition[tibs, "_14H"]] > 0, tabs[[8]][[14]] = tibs;;  
If[Length[StringPosition[tibs, "_15H"]] > 0, tabs[[8]][[15]] = tibs;;
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```
If[Length[StringPosition[tibs, "_1 J"]]>0, tabs[[7]][[1]] = tibs;;  
If[Length[StringPosition[tibs, "_2 J"]]>0, tabs[[7]][[2]] = tibs;;  
If[Length[StringPosition[tibs, "_3 J"]]>0, tabs[[7]][[3]] = tibs;;  
If[Length[StringPosition[tibs, "_4 J"]]>0, tabs[[7]][[4]] = tibs;;  
If[Length[StringPosition[tibs, "_5 J"]]>0, tabs[[7]][[5]] = tibs;;  
If[Length[StringPosition[tibs, "_6 J"]]>0, tabs[[7]][[6]] = tibs;;  
If[Length[StringPosition[tibs, "_7 J"]]>0, tabs[[7]][[7]] = tibs;;  
If[Length[StringPosition[tibs, "_8 J"]]>0, tabs[[7]][[8]] = tibs;;  
If[Length[StringPosition[tibs, "_9 J"]]>0, tabs[[7]][[9]] = tibs;;  
If[Length[StringPosition[tibs, "_10J"]]>0, tabs[[7]][[10]] = tibs;;  
If[Length[StringPosition[tibs, "_11J"]]>0, tabs[[7]][[11]] = tibs;;  
If[Length[StringPosition[tibs, "_12J"]]>0, tabs[[7]][[12]] = tibs;;  
If[Length[StringPosition[tibs, "_13J"]]>0, tabs[[7]][[13]] = tibs;;  
If[Length[StringPosition[tibs, "_14J"]]>0, tabs[[7]][[14]] = tibs;;  
If[Length[StringPosition[tibs, "_15J"]]>0, tabs[[7]][[15]] = tibs;;
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```
If[Length[StringPosition[tibs, "_1 K"]] > 0, tabs[[6]][[1]] = tibs;;  
If[Length[StringPosition[tibs, "_2 K"]] > 0, tabs[[6]][[2]] = tibs;;  
If[Length[StringPosition[tibs, "_3 K"]] > 0, tabs[[6]][[3]] = tibs;;  
If[Length[StringPosition[tibs, "_4 K"]] > 0, tabs[[6]][[4]] = tibs;;  
If[Length[StringPosition[tibs, "_5 K"]] > 0, tabs[[6]][[5]] = tibs;;
```

```
If[Length[StringPosition[tibs, "_6 K"]] > 0, tabs[[6]][[6]] = tibs;;];
If[Length[StringPosition[tibs, "_7 K"]] > 0, tabs[[6]][[7]] = tibs;;];
If[Length[StringPosition[tibs, "_8 K"]] > 0, tabs[[6]][[8]] = tibs;;];
If[Length[StringPosition[tibs, "_9 K"]] > 0, tabs[[6]][[9]] = tibs;;];
If[Length[StringPosition[tibs, "_10K"]] > 0, tabs[[6]][[10]] = tibs;;];
If[Length[StringPosition[tibs, "_11K"]] > 0, tabs[[6]][[11]] = tibs;;];
If[Length[StringPosition[tibs, "_12K"]] > 0, tabs[[6]][[12]] = tibs;;];
If[Length[StringPosition[tibs, "_13K"]] > 0, tabs[[6]][[13]] = tibs;;];
If[Length[StringPosition[tibs, "_14K"]] > 0, tabs[[6]][[14]] = tibs;;];
If[Length[StringPosition[tibs, "_15K"]] > 0, tabs[[6]][[15]] = tibs;;];
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If[Length[StringPosition[tibs, "_1 L"]]>0, tabs[[5]][[1]] = tibs;];
If[Length[StringPosition[tibs, "_2 L"]]>0, tabs[[5]][[2]] = tibs;];
If[Length[StringPosition[tibs, "_3 L"]]>0, tabs[[5]][[3]] = tibs;];
If[Length[StringPosition[tibs, "_4 L"]]>0, tabs[[5]][[4]] = tibs;];
If[Length[StringPosition[tibs, "_5 L"]]>0, tabs[[5]][[5]] = tibs;];
If[Length[StringPosition[tibs, "_6 L"]]>0, tabs[[5]][[6]] = tibs;];
If[Length[StringPosition[tibs, "_7 L"]]>0, tabs[[5]][[7]] = tibs;];
If[Length[StringPosition[tibs, "_8 L"]]>0, tabs[[5]][[8]] = tibs;];
If[Length[StringPosition[tibs, "_9 L"]]>0, tabs[[5]][[9]] = tibs;];
If[Length[StringPosition[tibs, "_10L"]]>0, tabs[[5]][[10]] = tibs;];
If[Length[StringPosition[tibs, "_11L"]]>0, tabs[[5]][[11]] = tibs;];
If[Length[StringPosition[tibs, "_12L"]]>0, tabs[[5]][[12]] = tibs;];
If[Length[StringPosition[tibs, "_13L"]]>0, tabs[[5]][[13]] = tibs;];
If[Length[StringPosition[tibs, "_14L"]]>0, tabs[[5]][[14]] = tibs;];
If[Length[StringPosition[tibs, "_15L"]]>0, tabs[[5]][[15]] = tibs;];

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If[Length[StringPosition[tibs, "_2 M"]] > 0, tabs[[4]][[2]] = tibs;;
If[Length[StringPosition[tibs, "_3 M"]] > 0, tabs[[4]][[3]] = tibs;;
If[Length[StringPosition[tibs, "_4 M"]] > 0, tabs[[4]][[4]] = tibs;;
If[Length[StringPosition[tibs, "_5 M"]] > 0, tabs[[4]][[5]] = tibs;;
If[Length[StringPosition[tibs, "_6 M"]] > 0, tabs[[4]][[6]] = tibs;;
If[Length[StringPosition[tibs, "_7 M"]] > 0, tabs[[4]][[7]] = tibs;;
If[Length[StringPosition[tibs, "_8 M"]] > 0, tabs[[4]][[8]] = tibs;;
If[Length[StringPosition[tibs, "_9 M"]] > 0, tabs[[4]][[9]] = tibs;;
If[Length[StringPosition[tibs, "_10M"]] > 0, tabs[[4]][[10]] = tibs;;
If[Length[StringPosition[tibs, "_11M"]] > 0, tabs[[4]][[11]] = tibs;;
If[Length[StringPosition[tibs, "_12M"]] > 0, tabs[[4]][[12]] = tibs;;
If[Length[StringPosition[tibs, "_13M"]] > 0, tabs[[4]][[13]] = tibs;;
If[Length[StringPosition[tibs, "_14M"]] > 0, tabs[[4]][[14]] = tibs;;

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```
If[Length[StringPosition[tibs, "_2 N"]] > 0, tabs[[3]][[2]] = tibs;;  
If[Length[StringPosition[tibs, "_3 N"]] > 0, tabs[[3]][[3]] = tibs;;  
If[Length[StringPosition[tibs, "_4 N"]] > 0, tabs[[3]][[4]] = tibs;;  
If[Length[StringPosition[tibs, "_5 N"]] > 0, tabs[[3]][[5]] = tibs;;  
If[Length[StringPosition[tibs, "_6 N"]] > 0, tabs[[3]][[6]] = tibs;;  
If[Length[StringPosition[tibs, "_7 N"]] > 0, tabs[[3]][[7]] = tibs;;  
If[Length[StringPosition[tibs, "_8 N"]] > 0, tabs[[3]][[8]] = tibs;;
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If[Length[StringPosition[tibs, "_9 N"]] > 0, tabs[[3]][[9]] = tubs;;
If[Length[StringPosition[tibs, "_10N"]] > 0, tabs[[3]][[10]] = tubs;;
If[Length[StringPosition[tibs, "_11N"]] > 0, tabs[[3]][[11]] = tubs;;
If[Length[StringPosition[tibs, "_12N"]] > 0, tabs[[3]][[12]] = tubs;;
If[Length[StringPosition[tibs, "_13N"]] > 0, tabs[[3]][[13]] = tubs;;
If[Length[StringPosition[tibs, "_14N"]] > 0, tabs[[3]][[14]] = tubs;;

If[Length[StringPosition[tibs, "_3 O"]] > 0, tabs[[2]][[3]] = tubs;;
If[Length[StringPosition[tibs, "_4 O"]] > 0, tabs[[2]][[4]] = tubs;;
If[Length[StringPosition[tibs, "_5 O"]] > 0, tabs[[2]][[5]] = tubs;;
If[Length[StringPosition[tibs, "_6 O"]] > 0, tabs[[2]][[6]] = tubs;;
If[Length[StringPosition[tibs, "_7 O"]] > 0, tabs[[2]][[7]] = tubs;;
If[Length[StringPosition[tibs, "_8 O"]] > 0, tabs[[2]][[8]] = tubs;;
If[Length[StringPosition[tibs, "_9 O"]] > 0, tabs[[2]][[9]] = tubs;;
If[Length[StringPosition[tibs, "_10O"]] > 0, tabs[[2]][[10]] = tubs;;
If[Length[StringPosition[tibs, "_11O"]] > 0, tabs[[2]][[11]] = tubs;;
If[Length[StringPosition[tibs, "_12O"]] > 0, tabs[[2]][[12]] = tubs;;
If[Length[StringPosition[tibs, "_13O"]] > 0, tabs[[2]][[13]] = tubs;;

If[Length[StringPosition[tibs, "_4 P"]] > 0, tabs[[1]][[4]] = tubs;;
If[Length[StringPosition[tibs, "_5 P"]] > 0, tabs[[1]][[5]] = tubs;;
If[Length[StringPosition[tibs, "_6 P"]] > 0, tabs[[1]][[6]] = tubs;;
If[Length[StringPosition[tibs, "_7 P"]] > 0, tabs[[1]][[7]] = tubs;;
If[Length[StringPosition[tibs, "_8 P"]] > 0, tabs[[1]][[8]] = tubs;;
If[Length[StringPosition[tibs, "_9 P"]] > 0, tabs[[1]][[9]] = tubs;;
If[Length[StringPosition[tibs, "_10P"]] > 0, tabs[[1]][[10]] = tubs;;
If[Length[StringPosition[tibs, "_11P"]] > 0, tabs[[1]][[11]] = tubs;;
If[Length[StringPosition[tibs, "_12P"]] > 0, tabs[[1]][[12]] = tubs;;
];
tabs];

(* read in the 2D segment data from the
power plant's ASCII files and give it 3D shape *)

GetBubbleData[datas_, seg_] :=
Module[{tabs = {}, len = Length[datas], tubNorm = 1.6}, For[h = 0, h < len,
h++, tibs = datas[[h + 1]][[1]]; tubs = datas[[h + 1]][[seg + 1]] / tubNorm;

If[Length[StringPosition[tibs, "_5 A"]] > 0,
tabs = Append[tabs, {5, 1, seg, tubs}];];
If[Length[StringPosition[tibs, "_6 A"]] > 0,
tabs = Append[tabs, {6, 1, seg, tubs}];];
If[Length[StringPosition[tibs, "_7 A"]] > 0,
tabs = Append[tabs, {7, 1, seg, tubs}];];
If[Length[StringPosition[tibs, "_8 A"]] > 0,
tabs = Append[tabs, {8, 1, seg, tubs}];];
If[Length[StringPosition[tibs, "_9 A"]] > 0,
tabs = Append[tabs, {9, 1, seg, tubs}];];

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If[Length[StringPosition[tibs, "_10A"]] > 0,
  tabs = Append[tabs, {10, 1, seg, tubs}];];
If[Length[StringPosition[tibs, "_11A"]] > 0,
  tabs = Append[tabs, {11, 1, seg, tubs}];];

If[Length[StringPosition[tibs, "_3 B"]] > 0,
  tabs = Append[tabs, {3, 2, seg, tubs}];];
If[Length[StringPosition[tibs, "_4 B"]] > 0,
  tabs = Append[tabs, {4, 2, seg, tubs}];];
If[Length[StringPosition[tibs, "_5 B"]] > 0,
  tabs = Append[tabs, {5, 2, seg, tubs}];];
If[Length[StringPosition[tibs, "_6 B"]] > 0,
  tabs = Append[tabs, {6, 2, seg, tubs}];];
If[Length[StringPosition[tibs, "_7 B"]] > 0,
  tabs = Append[tabs, {7, 2, seg, tubs}];];
If[Length[StringPosition[tibs, "_8 B"]] > 0,
  tabs = Append[tabs, {8, 2, seg, tubs}];];
If[Length[StringPosition[tibs, "_9 B"]] > 0,
  tabs = Append[tabs, {9, 2, seg, tubs}];];
If[Length[StringPosition[tibs, "_10B"]] > 0,
  tabs = Append[tabs, {10, 2, seg, tubs}];];
If[Length[StringPosition[tibs, "_11B"]] > 0,
  tabs = Append[tabs, {11, 2, seg, tubs}];];
If[Length[StringPosition[tibs, "_12B"]] > 0,
  tabs = Append[tabs, {12, 2, seg, tubs}];];
If[Length[StringPosition[tibs, "_13B"]] > 0,
  tabs = Append[tabs, {13, 2, seg, tubs}];];

If[Length[StringPosition[tibs, "_2 C"]] > 0,
  tabs = Append[tabs, {2, 3, seg, tubs}];];
If[Length[StringPosition[tibs, "_3 C"]] > 0,
  tabs = Append[tabs, {3, 3, seg, tubs}];];
If[Length[StringPosition[tibs, "_4 C"]] > 0,
  tabs = Append[tabs, {4, 3, seg, tubs}];];
If[Length[StringPosition[tibs, "_5 C"]] > 0,
  tabs = Append[tabs, {5, 3, seg, tubs}];];
If[Length[StringPosition[tibs, "_6 C"]] > 0,
  tabs = Append[tabs, {6, 3, seg, tubs}];];
If[Length[StringPosition[tibs, "_7 C"]] > 0,
  tabs = Append[tabs, {7, 3, seg, tubs}];];
If[Length[StringPosition[tibs, "_8 C"]] > 0,
  tabs = Append[tabs, {8, 3, seg, tubs}];];
If[Length[StringPosition[tibs, "_9 C"]] > 0,
  tabs = Append[tabs, {9, 3, seg, tubs}];];
If[Length[StringPosition[tibs, "_10C"]] > 0,
  tabs = Append[tabs, {10, 3, seg, tubs}];];
If[Length[StringPosition[tibs, "_11C"]] > 0,
  tabs = Append[tabs, {11, 3, seg, tubs}];];
If[Length[StringPosition[tibs, "_12C"]] > 0,

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    tabs = Append[tabs, {12, 3, seg, tubs}];];
If[Length[StringPosition[tibs, "_13C"]] > 0,
    tabs = Append[tabs, {13, 3, seg, tubs}];];
If[Length[StringPosition[tibs, "_14C"]] > 0,
    tabs = Append[tabs, {14, 3, seg, tubs}];];

If[Length[StringPosition[tibs, "_2 D"]] > 0,
    tabs = Append[tabs, {2, 4, seg, tubs}];];
If[Length[StringPosition[tibs, "_3 D"]] > 0,
    tabs = Append[tabs, {3, 4, seg, tubs}];];
If[Length[StringPosition[tibs, "_4 D"]] > 0,
    tabs = Append[tabs, {4, 4, seg, tubs}];];
If[Length[StringPosition[tibs, "_5 D"]] > 0,
    tabs = Append[tabs, {5, 4, seg, tubs}];];
If[Length[StringPosition[tibs, "_6 D"]] > 0,
    tabs = Append[tabs, {6, 4, seg, tubs}];];
If[Length[StringPosition[tibs, "_7 D"]] > 0,
    tabs = Append[tabs, {7, 4, seg, tubs}];];
If[Length[StringPosition[tibs, "_8 D"]] > 0,
    tabs = Append[tabs, {8, 4, seg, tubs}];];
If[Length[StringPosition[tibs, "_9 D"]] > 0,
    tabs = Append[tabs, {9, 4, seg, tubs}];];
If[Length[StringPosition[tibs, "_10D"]] > 0,
    tabs = Append[tabs, {10, 4, seg, tubs}];];
If[Length[StringPosition[tibs, "_11D"]] > 0,
    tabs = Append[tabs, {11, 4, seg, tubs}];];
If[Length[StringPosition[tibs, "_12D"]] > 0,
    tabs = Append[tabs, {12, 4, seg, tubs}];];
If[Length[StringPosition[tibs, "_13D"]] > 0,
    tabs = Append[tabs, {13, 4, seg, tubs}];];
If[Length[StringPosition[tibs, "_14D"]] > 0,
    tabs = Append[tabs, {14, 4, seg, tubs}];];

If[Length[StringPosition[tibs, "_1 E"]] > 0,
    tabs = Append[tabs, {1, 5, seg, tubs}];];
If[Length[StringPosition[tibs, "_2 E"]] > 0,
    tabs = Append[tabs, {2, 5, seg, tubs}];];
If[Length[StringPosition[tibs, "_3 E"]] > 0,
    tabs = Append[tabs, {3, 5, seg, tubs}];];
If[Length[StringPosition[tibs, "_4 E"]] > 0,
    tabs = Append[tabs, {4, 5, seg, tubs}];];
If[Length[StringPosition[tibs, "_5 E"]] > 0,
    tabs = Append[tabs, {5, 5, seg, tubs}];];
If[Length[StringPosition[tibs, "_6 E"]] > 0,
    tabs = Append[tabs, {6, 5, seg, tubs}];];
If[Length[StringPosition[tibs, "_7 E"]] > 0,
    tabs = Append[tabs, {7, 5, seg, tubs}];];
If[Length[StringPosition[tibs, "_8 E"]] > 0,
    tabs = Append[tabs, {8, 5, seg, tubs}];];

```

```

If[Length[StringPosition[tibs, "_9 E"]] > 0,
  tabs = Append[tabs, {9, 5, seg, tubs}];];
If[Length[StringPosition[tibs, "_10E"]] > 0,
  tabs = Append[tabs, {10, 5, seg, tubs}];];
If[Length[StringPosition[tibs, "_11E"]] > 0,
  tabs = Append[tabs, {11, 5, seg, tubs}];];
If[Length[StringPosition[tibs, "_12E"]] > 0,
  tabs = Append[tabs, {12, 5, seg, tubs}];];
If[Length[StringPosition[tibs, "_13E"]] > 0,
  tabs = Append[tabs, {13, 5, seg, tubs}];];
If[Length[StringPosition[tibs, "_14E"]] > 0,
  tabs = Append[tabs, {14, 5, seg, tubs}];];
If[Length[StringPosition[tibs, "_15E"]] > 0,
  tabs = Append[tabs, {15, 5, seg, tubs}];];

If[Length[StringPosition[tibs, "_1 F"]] > 0,
  tabs = Append[tabs, {1, 6, seg, tubs}];];
If[Length[StringPosition[tibs, "_2 F"]] > 0,
  tabs = Append[tabs, {2, 6, seg, tubs}];];
If[Length[StringPosition[tibs, "_3 F"]] > 0,
  tabs = Append[tabs, {3, 6, seg, tubs}];];
If[Length[StringPosition[tibs, "_4 F"]] > 0,
  tabs = Append[tabs, {4, 6, seg, tubs}];];
If[Length[StringPosition[tibs, "_5 F"]] > 0,
  tabs = Append[tabs, {5, 6, seg, tubs}];];
If[Length[StringPosition[tibs, "_6 F"]] > 0,
  tabs = Append[tabs, {6, 6, seg, tubs}];];
If[Length[StringPosition[tibs, "_7 F"]] > 0,
  tabs = Append[tabs, {7, 6, seg, tubs}];];
If[Length[StringPosition[tibs, "_8 F"]] > 0,
  tabs = Append[tabs, {8, 6, seg, tubs}];];
If[Length[StringPosition[tibs, "_9 F"]] > 0,
  tabs = Append[tabs, {9, 6, seg, tubs}];];
If[Length[StringPosition[tibs, "_10F"]] > 0,
  tabs = Append[tabs, {10, 6, seg, tubs}];];
If[Length[StringPosition[tibs, "_11F"]] > 0,
  tabs = Append[tabs, {11, 6, seg, tubs}];];
If[Length[StringPosition[tibs, "_12F"]] > 0,
  tabs = Append[tabs, {12, 6, seg, tubs}];];
If[Length[StringPosition[tibs, "_13F"]] > 0,
  tabs = Append[tabs, {13, 6, seg, tubs}];];
If[Length[StringPosition[tibs, "_14F"]] > 0,
  tabs = Append[tabs, {14, 6, seg, tubs}];];
If[Length[StringPosition[tibs, "_15F"]] > 0,
  tabs = Append[tabs, {15, 6, seg, tubs}];];

If[Length[StringPosition[tibs, "_1 G"]] > 0,
  tabs = Append[tabs, {1, 7, seg, tubs}];];
If[Length[StringPosition[tibs, "_2 G"]] > 0,

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    tabs = Append[tabs, {2, 7, seg, tubs}];];
If[Length[StringPosition[tibs, "_3 G"]] > 0,
    tabs = Append[tabs, {3, 7, seg, tubs}];];
If[Length[StringPosition[tibs, "_4 G"]] > 0,
    tabs = Append[tabs, {4, 7, seg, tubs}];];
If[Length[StringPosition[tibs, "_5 G"]] > 0,
    tabs = Append[tabs, {5, 7, seg, tubs}];];
If[Length[StringPosition[tibs, "_6 G"]] > 0,
    tabs = Append[tabs, {6, 7, seg, tubs}];];
If[Length[StringPosition[tibs, "_7 G"]] > 0,
    tabs = Append[tabs, {7, 7, seg, tubs}];];
If[Length[StringPosition[tibs, "_8 G"]] > 0,
    tabs = Append[tabs, {8, 7, seg, tubs}];];
If[Length[StringPosition[tibs, "_9 G"]] > 0,
    tabs = Append[tabs, {9, 7, seg, tubs}];];
If[Length[StringPosition[tibs, "_10G"]] > 0,
    tabs = Append[tabs, {10, 7, seg, tubs}];];
If[Length[StringPosition[tibs, "_11G"]] > 0,
    tabs = Append[tabs, {11, 7, seg, tubs}];];
If[Length[StringPosition[tibs, "_12G"]] > 0,
    tabs = Append[tabs, {12, 7, seg, tubs}];];
If[Length[StringPosition[tibs, "_13G"]] > 0,
    tabs = Append[tabs, {13, 7, seg, tubs}];];
If[Length[StringPosition[tibs, "_14G"]] > 0,
    tabs = Append[tabs, {14, 7, seg, tubs}];];
If[Length[StringPosition[tibs, "_15G"]] > 0,
    tabs = Append[tabs, {15, 7, seg, tubs}];];

If[Length[StringPosition[tibs, "_1 H"]] > 0,
    tabs = Append[tabs, {1, 8, seg, tubs}];];
If[Length[StringPosition[tibs, "_2 H"]] > 0,
    tabs = Append[tabs, {2, 8, seg, tubs}];];
If[Length[StringPosition[tibs, "_3 H"]] > 0,
    tabs = Append[tabs, {3, 8, seg, tubs}];];
If[Length[StringPosition[tibs, "_4 H"]] > 0,
    tabs = Append[tabs, {4, 8, seg, tubs}];];
If[Length[StringPosition[tibs, "_5 H"]] > 0,
    tabs = Append[tabs, {5, 8, seg, tubs}];];
If[Length[StringPosition[tibs, "_6 H"]] > 0,
    tabs = Append[tabs, {6, 8, seg, tubs}];];
If[Length[StringPosition[tibs, "_7 H"]] > 0,
    tabs = Append[tabs, {7, 8, seg, tubs}];];
If[Length[StringPosition[tibs, "_8 H"]] > 0,
    tabs = Append[tabs, {8, 8, seg, tubs}];];
If[Length[StringPosition[tibs, "_9 H"]] > 0,
    tabs = Append[tabs, {9, 8, seg, tubs}];];
If[Length[StringPosition[tibs, "_10H"]] > 0,
    tabs = Append[tabs, {10, 8, seg, tubs}];];
If[Length[StringPosition[tibs, "_11H"]] > 0,

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    tabs = Append[tabs, {11, 8, seg, tubs}];];
If[Length[StringPosition[tibs, "_12H"]] > 0,
  tabs = Append[tabs, {12, 8, seg, tubs}];];
If[Length[StringPosition[tibs, "_13H"]] > 0,
  tabs = Append[tabs, {13, 8, seg, tubs}];];
If[Length[StringPosition[tibs, "_14H"]] > 0,
  tabs = Append[tabs, {14, 8, seg, tubs}];];
If[Length[StringPosition[tibs, "_15H"]] > 0,
  tabs = Append[tabs, {15, 8, seg, tubs}];];

If[Length[StringPosition[tibs, "_1 J"]] > 0,
  tabs = Append[tabs, {1, 9, seg, tubs}];];
If[Length[StringPosition[tibs, "_2 J"]] > 0,
  tabs = Append[tabs, {2, 9, seg, tubs}];];
If[Length[StringPosition[tibs, "_3 J"]] > 0,
  tabs = Append[tabs, {3, 9, seg, tubs}];];
If[Length[StringPosition[tibs, "_4 J"]] > 0,
  tabs = Append[tabs, {4, 9, seg, tubs}];];
If[Length[StringPosition[tibs, "_5 J"]] > 0,
  tabs = Append[tabs, {5, 9, seg, tubs}];];
If[Length[StringPosition[tibs, "_6 J"]] > 0,
  tabs = Append[tabs, {6, 9, seg, tubs}];];
If[Length[StringPosition[tibs, "_7 J"]] > 0,
  tabs = Append[tabs, {7, 9, seg, tubs}];];
If[Length[StringPosition[tibs, "_8 J"]] > 0,
  tabs = Append[tabs, {8, 9, seg, tubs}];];
If[Length[StringPosition[tibs, "_9 J"]] > 0,
  tabs = Append[tabs, {9, 9, seg, tubs}];];
If[Length[StringPosition[tibs, "_10J"]] > 0,
  tabs = Append[tabs, {10, 9, seg, tubs}];];
If[Length[StringPosition[tibs, "_11J"]] > 0,
  tabs = Append[tabs, {11, 9, seg, tubs}];];
If[Length[StringPosition[tibs, "_12J"]] > 0,
  tabs = Append[tabs, {12, 9, seg, tubs}];];
If[Length[StringPosition[tibs, "_13J"]] > 0,
  tabs = Append[tabs, {13, 9, seg, tubs}];];
If[Length[StringPosition[tibs, "_14J"]] > 0,
  tabs = Append[tabs, {14, 9, seg, tubs}];];
If[Length[StringPosition[tibs, "_15J"]] > 0,
  tabs = Append[tabs, {15, 9, seg, tubs}];];

If[Length[StringPosition[tibs, "_1 K"]] > 0,
  tabs = Append[tabs, {1, 10, seg, tubs}];];
If[Length[StringPosition[tibs, "_2 K"]] > 0,
  tabs = Append[tabs, {2, 10, seg, tubs}];];
If[Length[StringPosition[tibs, "_3 K"]] > 0,
  tabs = Append[tabs, {3, 10, seg, tubs}];];
If[Length[StringPosition[tibs, "_4 K"]] > 0,
  tabs = Append[tabs, {4, 10, seg, tubs}];];

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If[Length[StringPosition[tibs, "_5 K"]] > 0,
  tabs = Append[tabs, {5, 10, seg, tubs}];];
If[Length[StringPosition[tibs, "_6 K"]] > 0,
  tabs = Append[tabs, {6, 10, seg, tubs}];];
If[Length[StringPosition[tibs, "_7 K"]] > 0,
  tabs = Append[tabs, {7, 10, seg, tubs}];];
If[Length[StringPosition[tibs, "_8 K"]] > 0,
  tabs = Append[tabs, {8, 10, seg, tubs}];];
If[Length[StringPosition[tibs, "_9 K"]] > 0,
  tabs = Append[tabs, {9, 10, seg, tubs}];];
If[Length[StringPosition[tibs, "_10K"]] > 0,
  tabs = Append[tabs, {10, 10, seg, tubs}];];
If[Length[StringPosition[tibs, "_11K"]] > 0,
  tabs = Append[tabs, {11, 10, seg, tubs}];];
If[Length[StringPosition[tibs, "_12K"]] > 0,
  tabs = Append[tabs, {12, 10, seg, tubs}];];
If[Length[StringPosition[tibs, "_13K"]] > 0,
  tabs = Append[tabs, {13, 10, seg, tubs}];];
If[Length[StringPosition[tibs, "_14K"]] > 0,
  tabs = Append[tabs, {14, 10, seg, tubs}];];
If[Length[StringPosition[tibs, "_15K"]] > 0,
  tabs = Append[tabs, {15, 10, seg, tubs}];];

If[Length[StringPosition[tibs, "_1 L"]] > 0,
  tabs = Append[tabs, {1, 11, seg, tubs}];];
If[Length[StringPosition[tibs, "_2 L"]] > 0,
  tabs = Append[tabs, {2, 11, seg, tubs}];];
If[Length[StringPosition[tibs, "_3 L"]] > 0,
  tabs = Append[tabs, {3, 11, seg, tubs}];];
If[Length[StringPosition[tibs, "_4 L"]] > 0,
  tabs = Append[tabs, {4, 11, seg, tubs}];];
If[Length[StringPosition[tibs, "_5 L"]] > 0,
  tabs = Append[tabs, {5, 11, seg, tubs}];];
If[Length[StringPosition[tibs, "_6 L"]] > 0,
  tabs = Append[tabs, {6, 11, seg, tubs}];];
If[Length[StringPosition[tibs, "_7 L"]] > 0,
  tabs = Append[tabs, {7, 11, seg, tubs}];];
If[Length[StringPosition[tibs, "_8 L"]] > 0,
  tabs = Append[tabs, {8, 11, seg, tubs}];];
If[Length[StringPosition[tibs, "_9 L"]] > 0,
  tabs = Append[tabs, {9, 11, seg, tubs}];];
If[Length[StringPosition[tibs, "_10L"]] > 0,
  tabs = Append[tabs, {10, 11, seg, tubs}];];
If[Length[StringPosition[tibs, "_11L"]] > 0,
  tabs = Append[tabs, {11, 11, seg, tubs}];];
If[Length[StringPosition[tibs, "_12L"]] > 0,
  tabs = Append[tabs, {12, 11, seg, tubs}];];
If[Length[StringPosition[tibs, "_13L"]] > 0,
  tabs = Append[tabs, {13, 11, seg, tubs}];];

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If[Length[StringPosition[tibs, "_14L"]] > 0,
  tabs = Append[tabs, {14, 11, seg, tubs}];];
If[Length[StringPosition[tibs, "_15K"]] > 0,
  tabs = Append[tabs, {15, 11, seg, tubs}];];

If[Length[StringPosition[tibs, "_2 M"]] > 0,
  tabs = Append[tabs, {2, 12, seg, tubs}];];
If[Length[StringPosition[tibs, "_3 M"]] > 0,
  tabs = Append[tabs, {3, 12, seg, tubs}];];
If[Length[StringPosition[tibs, "_4 M"]] > 0,
  tabs = Append[tabs, {4, 12, seg, tubs}];];
If[Length[StringPosition[tibs, "_5 M"]] > 0,
  tabs = Append[tabs, {5, 12, seg, tubs}];];
If[Length[StringPosition[tibs, "_6 M"]] > 0,
  tabs = Append[tabs, {6, 12, seg, tubs}];];
If[Length[StringPosition[tibs, "_7 M"]] > 0,
  tabs = Append[tabs, {7, 12, seg, tubs}];];
If[Length[StringPosition[tibs, "_8 M"]] > 0,
  tabs = Append[tabs, {8, 12, seg, tubs}];];
If[Length[StringPosition[tibs, "_9 M"]] > 0,
  tabs = Append[tabs, {9, 12, seg, tubs}];];
If[Length[StringPosition[tibs, "_10M"]] > 0,
  tabs = Append[tabs, {10, 12, seg, tubs}];];
If[Length[StringPosition[tibs, "_11M"]] > 0,
  tabs = Append[tabs, {11, 12, seg, tubs}];];
If[Length[StringPosition[tibs, "_12M"]] > 0,
  tabs = Append[tabs, {12, 12, seg, tubs}];];
If[Length[StringPosition[tibs, "_13M"]] > 0,
  tabs = Append[tabs, {13, 12, seg, tubs}];];
If[Length[StringPosition[tibs, "_14M"]] > 0,
  tabs = Append[tabs, {14, 12, seg, tubs}];];

If[Length[StringPosition[tibs, "_2 N"]] > 0,
  tabs = Append[tabs, {2, 13, seg, tubs}];];
If[Length[StringPosition[tibs, "_3 N"]] > 0,
  tabs = Append[tabs, {3, 13, seg, tubs}];];
If[Length[StringPosition[tibs, "_4 N"]] > 0,
  tabs = Append[tabs, {4, 13, seg, tubs}];];
If[Length[StringPosition[tibs, "_5 N"]] > 0,
  tabs = Append[tabs, {5, 13, seg, tubs}];];
If[Length[StringPosition[tibs, "_6 N"]] > 0,
  tabs = Append[tabs, {6, 13, seg, tubs}];];
If[Length[StringPosition[tibs, "_7 N"]] > 0,
  tabs = Append[tabs, {7, 13, seg, tubs}];];
If[Length[StringPosition[tibs, "_8 N"]] > 0,
  tabs = Append[tabs, {8, 13, seg, tubs}];];
If[Length[StringPosition[tibs, "_9 N"]] > 0,
  tabs = Append[tabs, {9, 13, seg, tubs}];];
If[Length[StringPosition[tibs, "_10N"]] > 0,

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    tabs = Append[tabs, {10, 13, seg, tubs}];];
If[Length[StringPosition[tibs, "_11N"]] > 0,
  tabs = Append[tabs, {11, 13, seg, tubs}];];
If[Length[StringPosition[tibs, "_12N"]] > 0,
  tabs = Append[tabs, {12, 13, seg, tubs}];];
If[Length[StringPosition[tibs, "_13N"]] > 0,
  tabs = Append[tabs, {13, 13, seg, tubs}];];
If[Length[StringPosition[tibs, "_14N"]] > 0,
  tabs = Append[tabs, {14, 13, seg, tubs}];];

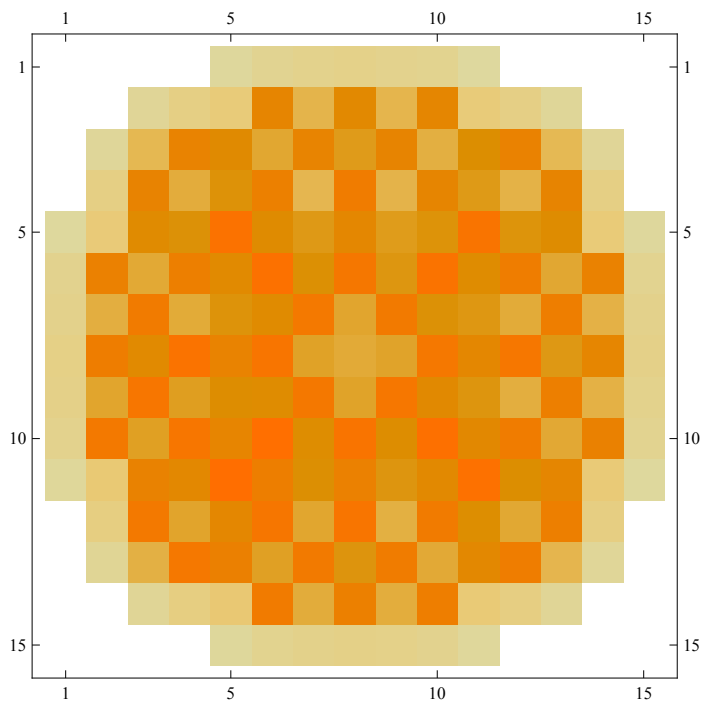
If[Length[StringPosition[tibs, "_3 O"]] > 0,
  tabs = Append[tabs, {3, 14, seg, tubs}];];
If[Length[StringPosition[tibs, "_4 O"]] > 0,
  tabs = Append[tabs, {4, 14, seg, tubs}];];
If[Length[StringPosition[tibs, "_5 O"]] > 0,
  tabs = Append[tabs, {5, 14, seg, tubs}];];
If[Length[StringPosition[tibs, "_6 O"]] > 0,
  tabs = Append[tabs, {6, 14, seg, tubs}];];
If[Length[StringPosition[tibs, "_7 O"]] > 0,
  tabs = Append[tabs, {7, 14, seg, tubs}];];
If[Length[StringPosition[tibs, "_8 O"]] > 0,
  tabs = Append[tabs, {8, 14, seg, tubs}];];
If[Length[StringPosition[tibs, "_9 O"]] > 0,
  tabs = Append[tabs, {9, 14, seg, tubs}];];
If[Length[StringPosition[tibs, "_10O"]] > 0,
  tabs = Append[tabs, {10, 14, seg, tubs}];];
If[Length[StringPosition[tibs, "_11O"]] > 0,
  tabs = Append[tabs, {11, 14, seg, tubs}];];
If[Length[StringPosition[tibs, "_12O"]] > 0,
  tabs = Append[tabs, {12, 14, seg, tubs}];];
If[Length[StringPosition[tibs, "_13O"]] > 0,
  tabs = Append[tabs, {13, 14, seg, tubs}];];

If[Length[StringPosition[tibs, "_5 P"]] > 0,
  tabs = Append[tabs, {5, 15, seg, tubs}];];
If[Length[StringPosition[tibs, "_6 P"]] > 0,
  tabs = Append[tabs, {6, 15, seg, tubs}];];
If[Length[StringPosition[tibs, "_7 P"]] > 0,
  tabs = Append[tabs, {7, 15, seg, tubs}];];
If[Length[StringPosition[tibs, "_8 P"]] > 0,
  tabs = Append[tabs, {8, 15, seg, tubs}];];
If[Length[StringPosition[tibs, "_9 P"]] > 0,
  tabs = Append[tabs, {9, 15, seg, tubs}];];
If[Length[StringPosition[tibs, "_10P"]] > 0,
  tabs = Append[tabs, {10, 15, seg, tubs}];];
If[Length[StringPosition[tibs, "_11P"]] > 0,
  tabs = Append[tabs, {11, 15, seg, tubs}];];

];

```

```
tabs];  
mat = GetSegmentData[data01, 15];  
MatrixPlot[mat]
```



```

mut01 = GetBubbleData[data01, 2];
mut02 = GetBubbleData[data01, 15];
mut03 = GetBubbleData[data01, 31];
BubbleChart3D[Flatten[{mut01, mut02, mut03}, 1],
  ColorFunction -> (ColorData["Rainbow"][#4] &),
  BubbleSizes -> {0.02, 0.03}, ChartElementFunction -> "FadingCube",
  ChartBaseStyle -> EdgeForm[None], BoxRatios -> {1, 1, 1}]

```

