

# 1.3 Coordinate augmentation features

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Several coordination augmentation features have been implemented. While the previous two vignettes showed off some of them, this one summarizes all available newly generated coordinate features.

```
features <- c("^Image.Count_Cells$",
  "^Nuclei.AreaShape_Area$",
  "^Nuclei.AreaShape_FormFactor$",
  "^Cells.Location_Center_X$",
  "^Cells.Location_Center_Y$",
  "^Cells.AreaShape_Area$",
  "^Cells.Intensity_MeanIntensity_CorrPathogen$",
  "^Cells.Intensity_StdIntensity_CorrPathogen$",
  "^Nuclei.Intensity_MeanIntensity_CorrPathogen$",
  "^Nuclei.Intensity_StdIntensity_CorrPathogen$")
data.red <- PlateData(PlateLocation("J107-2C"), select=features)

## reading plate chache file.
## assuming 9 images per well:
## max length: 3456, fraction of full length features: 0.995
## removing 598 unmatched features.

data.aug <- augmentImageLocation(data.red)
data.aug <- augmentCoordinateFeatures(data.aug, 5, c(14, 10), TRUE, TRUE)

## ellipse sizes: 289536, 579072, 868608, 1158144 (within images)
## and: 2635088, 5270176, 7905264, 10540352 (within wells)
## facet size: 99 (x), 104 (y)
## including distance to image center.
## calculating densities.

## Warning in FUN(X[[i]], ...): not estimating densities with less than 2
## cells.

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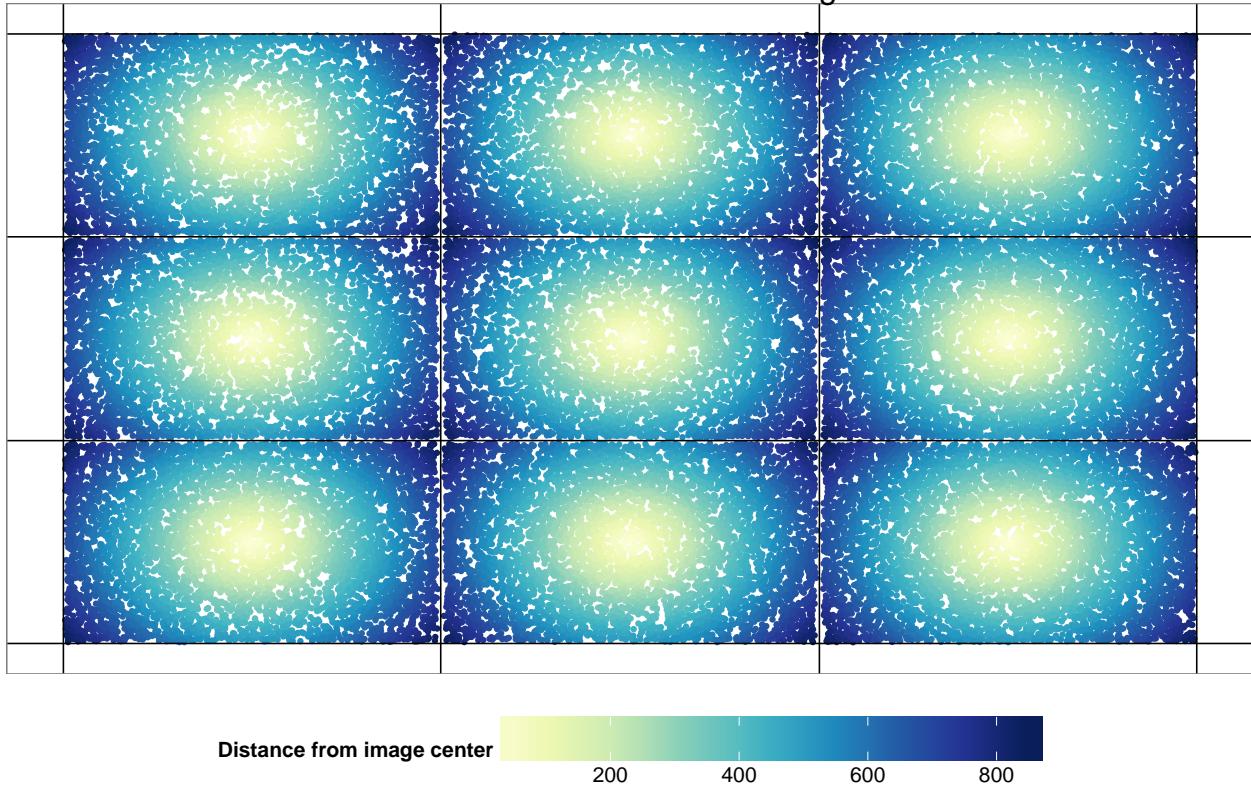
## Warning in FUN(X[[i]], ...): not estimating densities with less than 2
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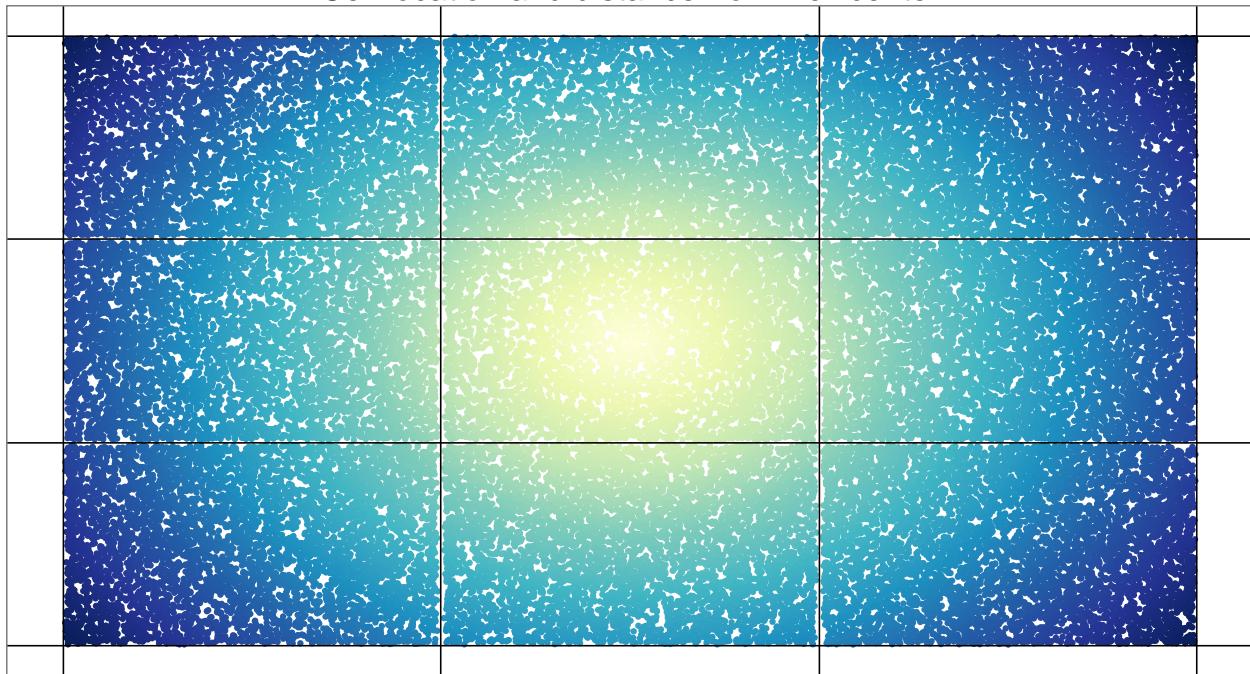
molten    <- meltData(data.aug)
cells      <- molten$mat$Cells
thin <- sample.int(nrow(cells), nrow(cells) / 20)
vlines <- data.frame(c(0, 1397, 2799, 4196))
hlines <- data.frame(c(0, 1045, 2095, 3140))
names(vlines) <- "border"
names(hlines) <- "border"

```

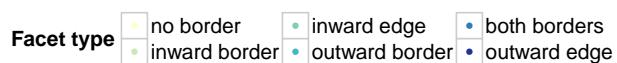
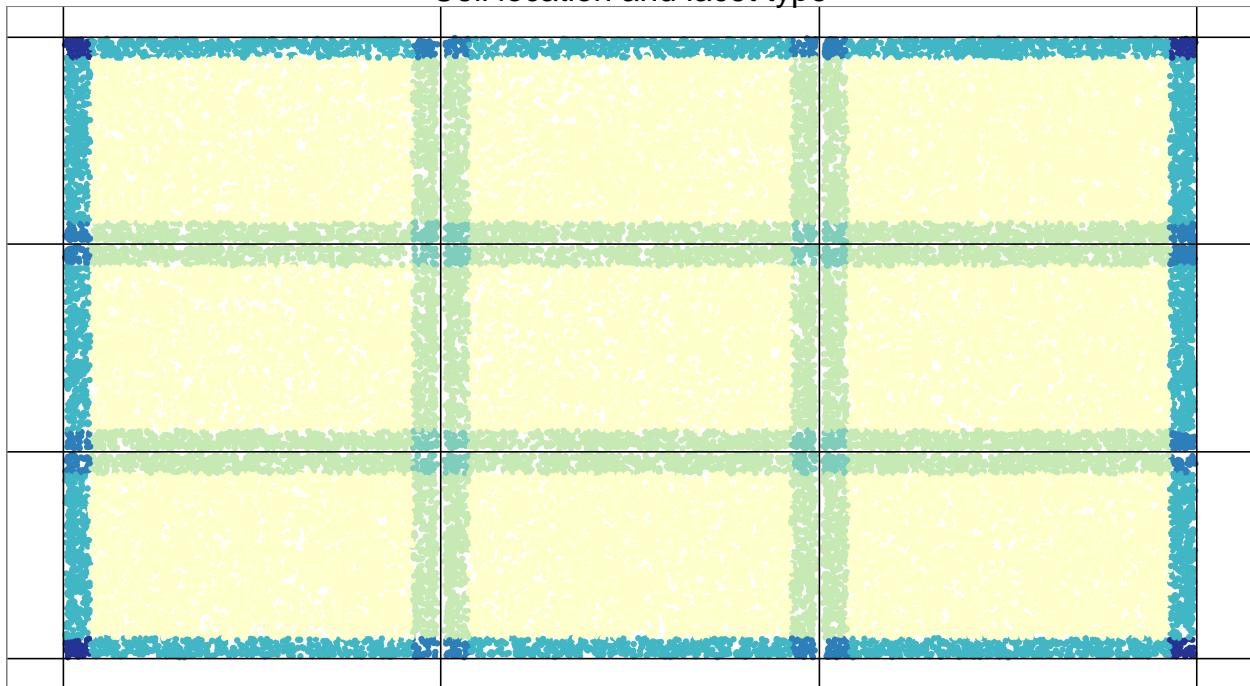
Cell location and distance from image center



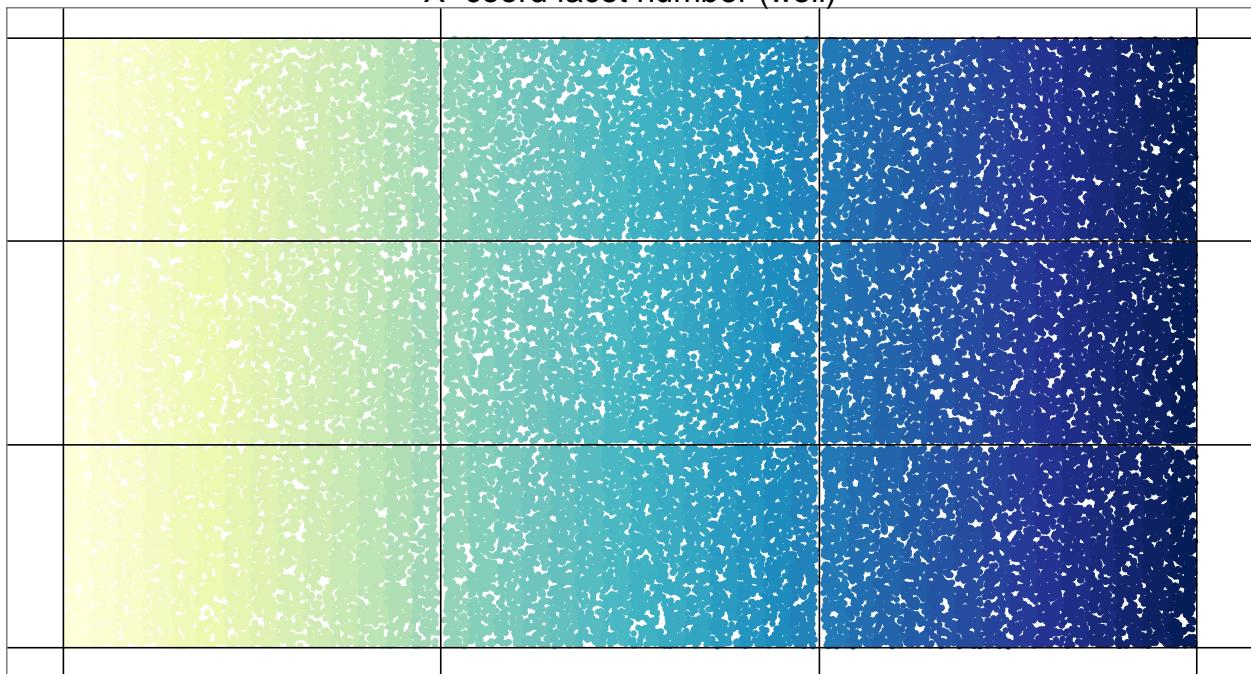
Cell location and distance from well center



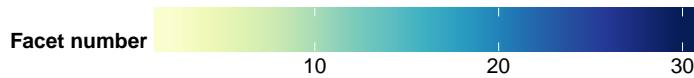
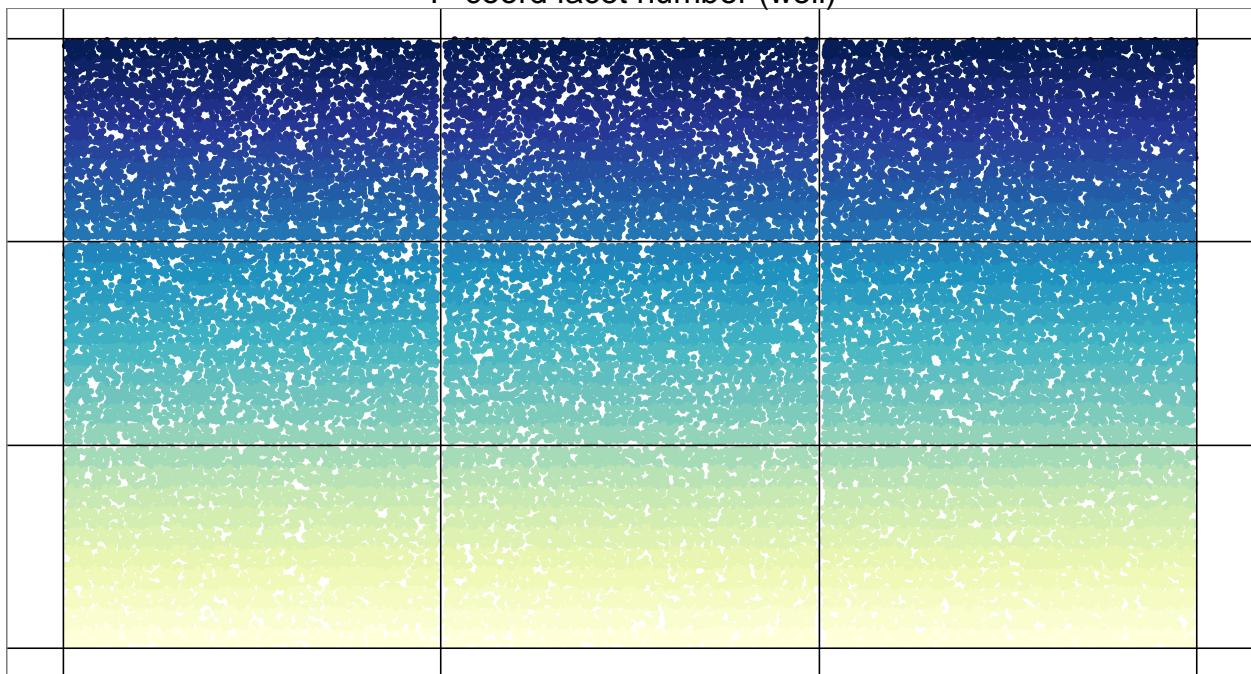
Cell location and facet type



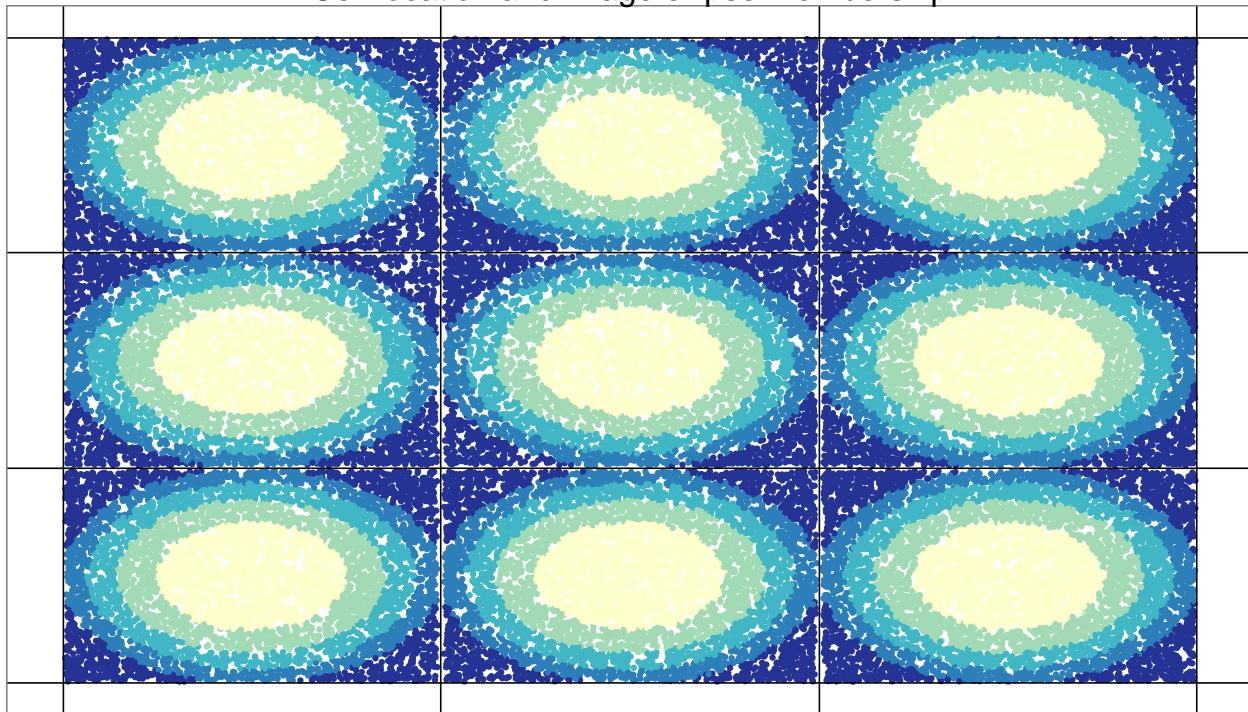
X-coord facet number (well)



Y-coord facet number (well)

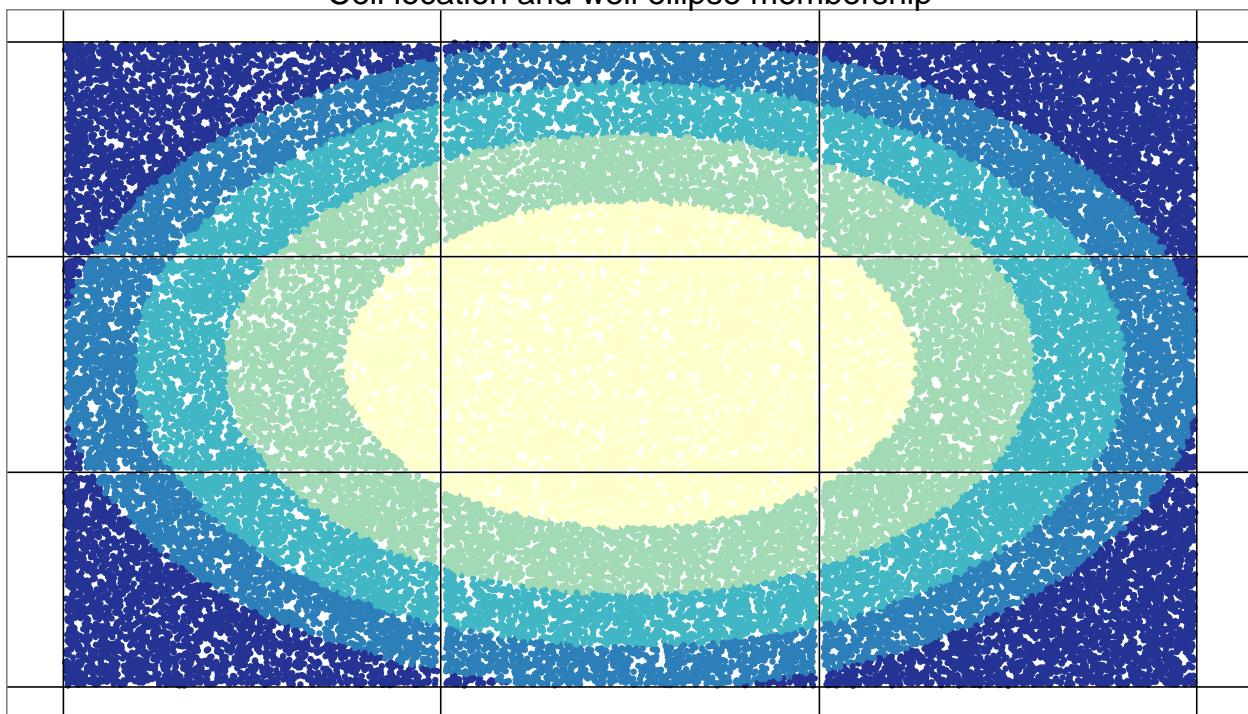


Cell location and image ellipse membership



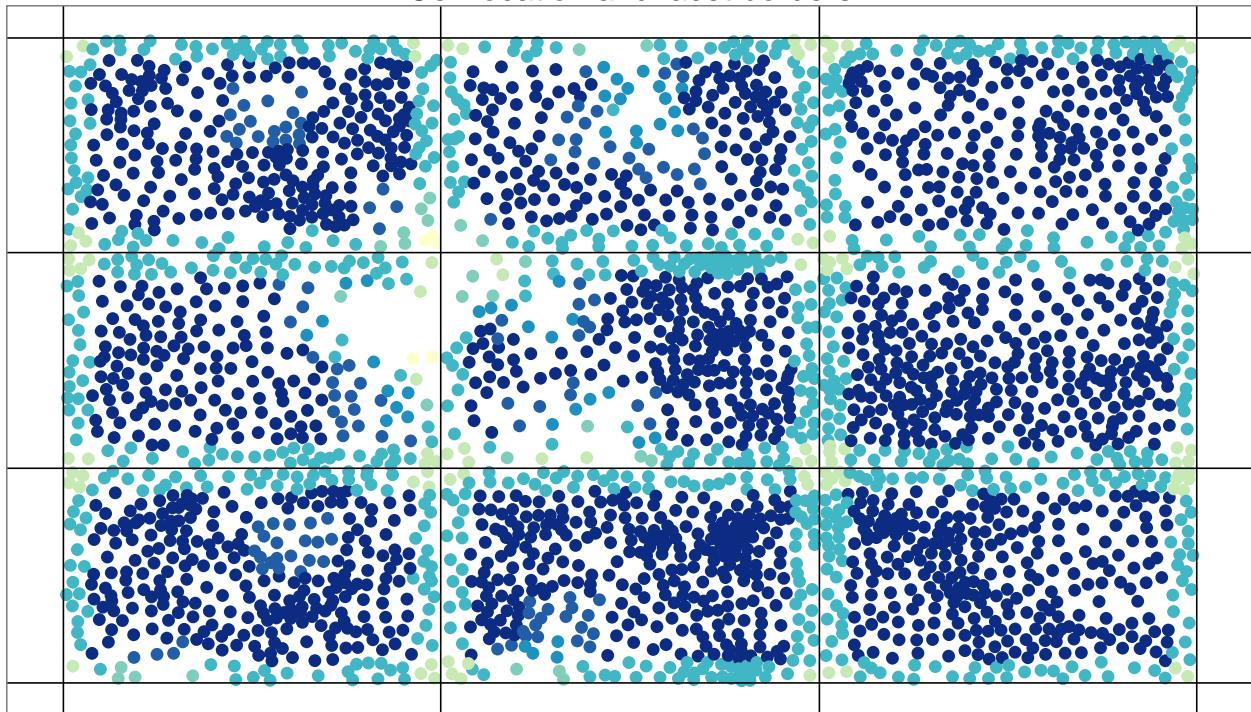
Ellipses □ 1 □ 2 □ 3 □ 4 □ 5

Cell location and well ellipse membership



Ellipses □ 1 □ 2 □ 3 □ 4 □ 5

Cell location and facet borders



Non-empty neighbor facets 2 3 4 5 6 7 8

Cell location and cell density

