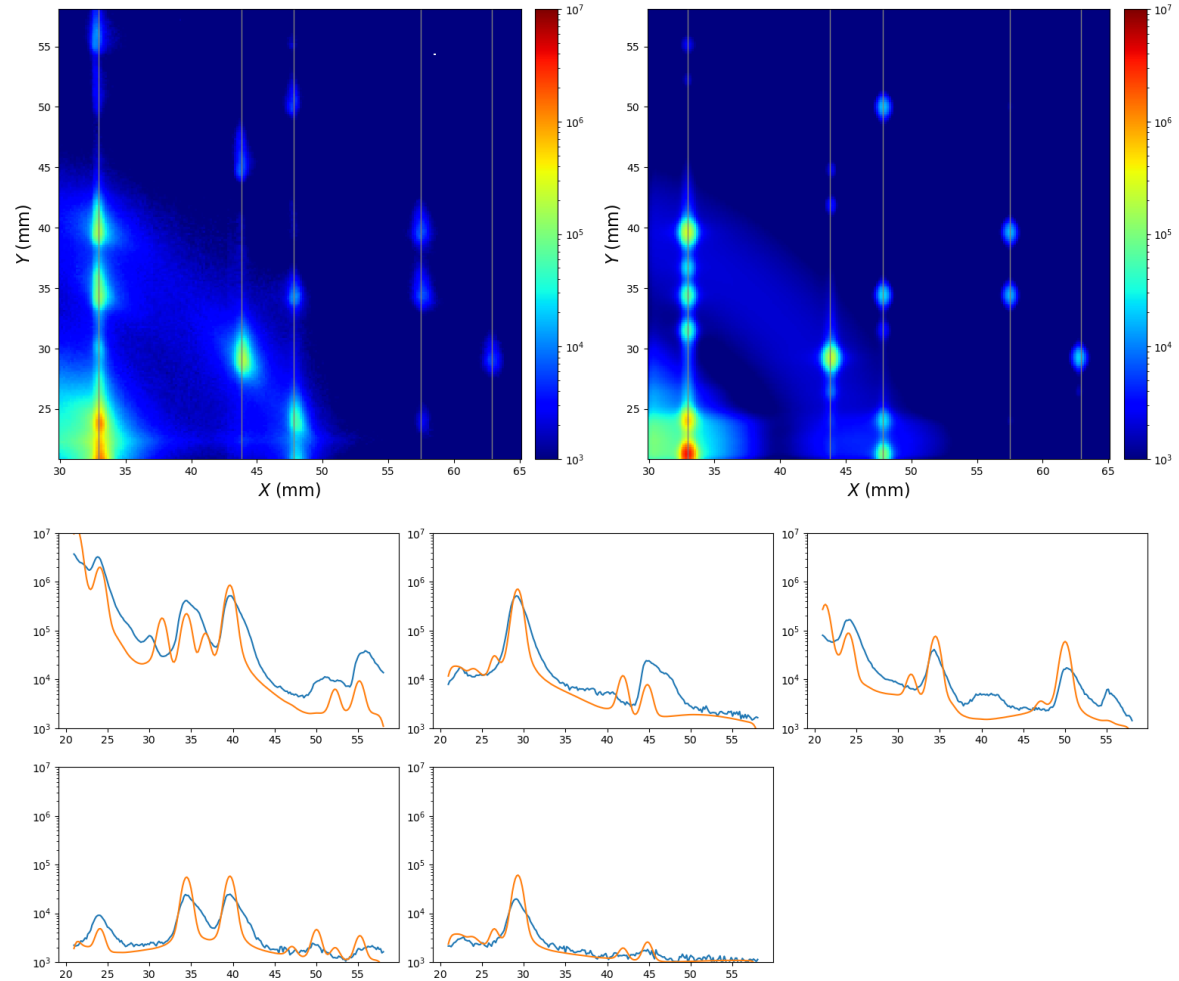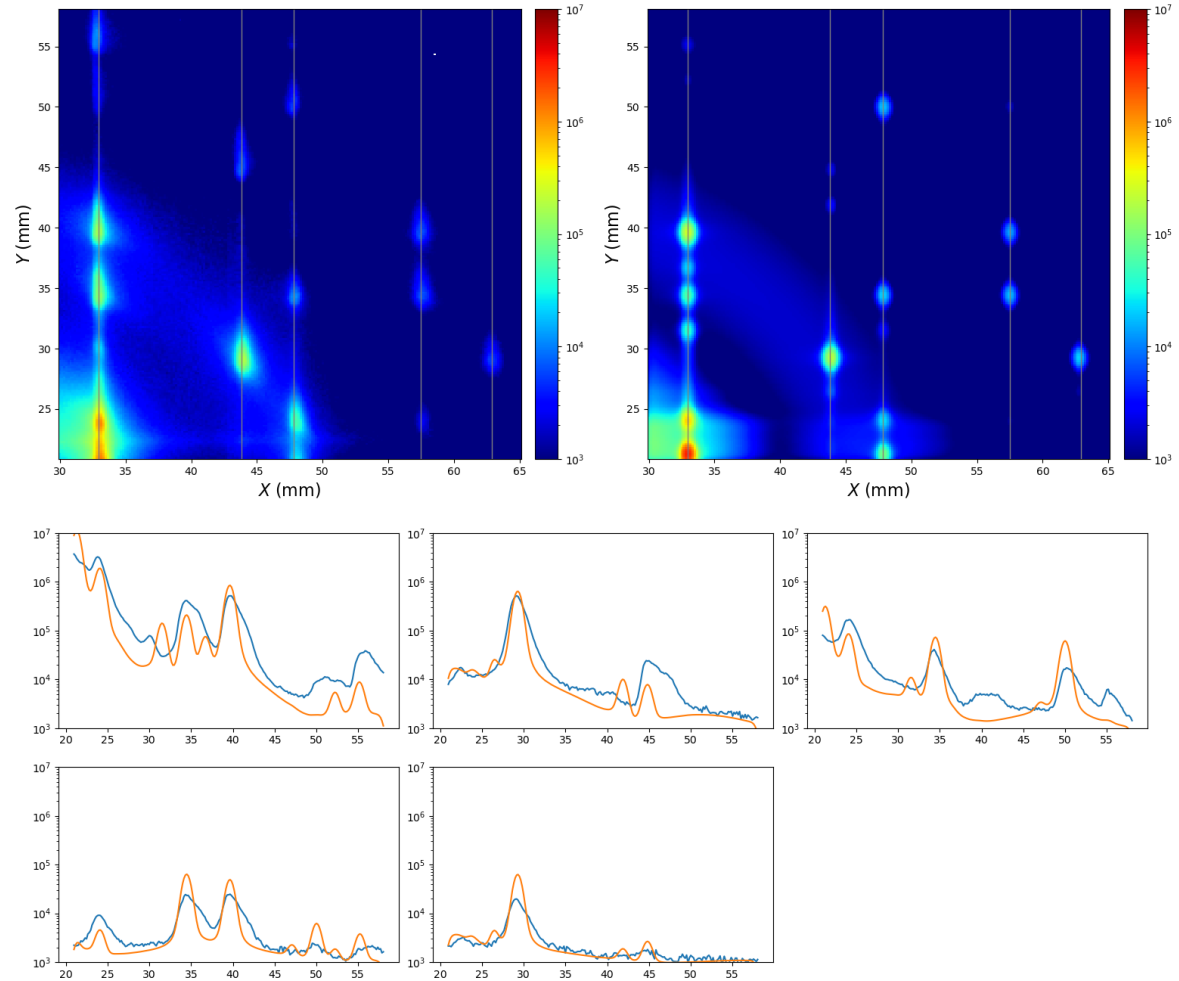# RandomMeso, roughness scan

```
{

"sample_builder_type":  "SampleBuilderVer3",

"layouts":  [

"RandomSizeParticles",

"RandomMesoFactory"

],

"roughness":  0.5,

"average_layer_thickness":  1100,

"meso_elevation":  20,

"RandomMesoFactory":  {

"meso_count":  500,

"layout_weight":  0.02,

"surface_filling_ratio":  0.12,

"tilt_dtheta":  0.2

},

"meso_builder_type":  "FuzzyCylinder",

"lattice_length_a":  12.5,

"lattice_length_c":  31.1,

"nparticles":  10,

"nanoparticle_radius":  5.02,

"sigma_nanoparticle_radius":  0.3,

"meso_height":  200.0,

"meso_radius":  200.0,

"particle_pos_sigma":  0.3,

"rotation_x":  0.0,

"rotation_z":  0.0

}
```
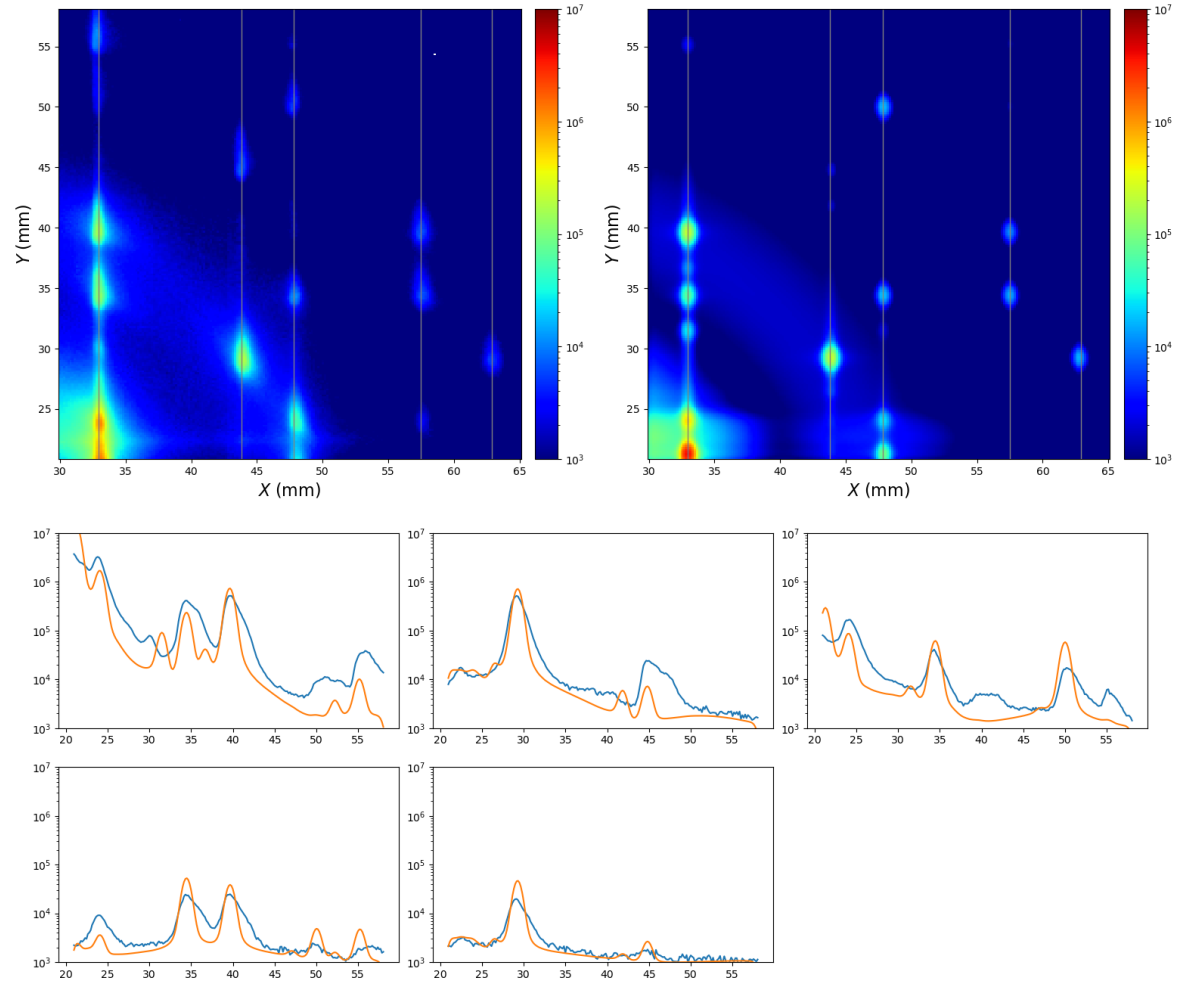
1

RandomMeso, roughness scan

```
{
"sample_builder_type":  "SampleBuilderVer3",
"layouts":  [
"RandomSizeParticles",
"RandomMesoFactory"
],
"roughness":  1.0,
"average_layer_thickness":  1100,
"meso_elevation":  20,
"RandomMesoFactory":  {
"meso_count":  500,
"layout_weight":  0.02,
"surface_filling_ratio":  0.12,
"tilt_dtheta":  0.2
},
"meso_builder_type":  "FuzzyCylinder",
"lattice_length_a":  12.5,
"lattice_length_c":  31.1,
"nparticles":  10,
"nanoparticle_radius":  5.02,
"sigma_nanoparticle_radius":  0.3,
"meso_height":  200.0,
"meso_radius":  200.0,
"particle_pos_sigma":  0.3,
"rotation_x":  0.0,
"rotation_z":  0.0
}
```
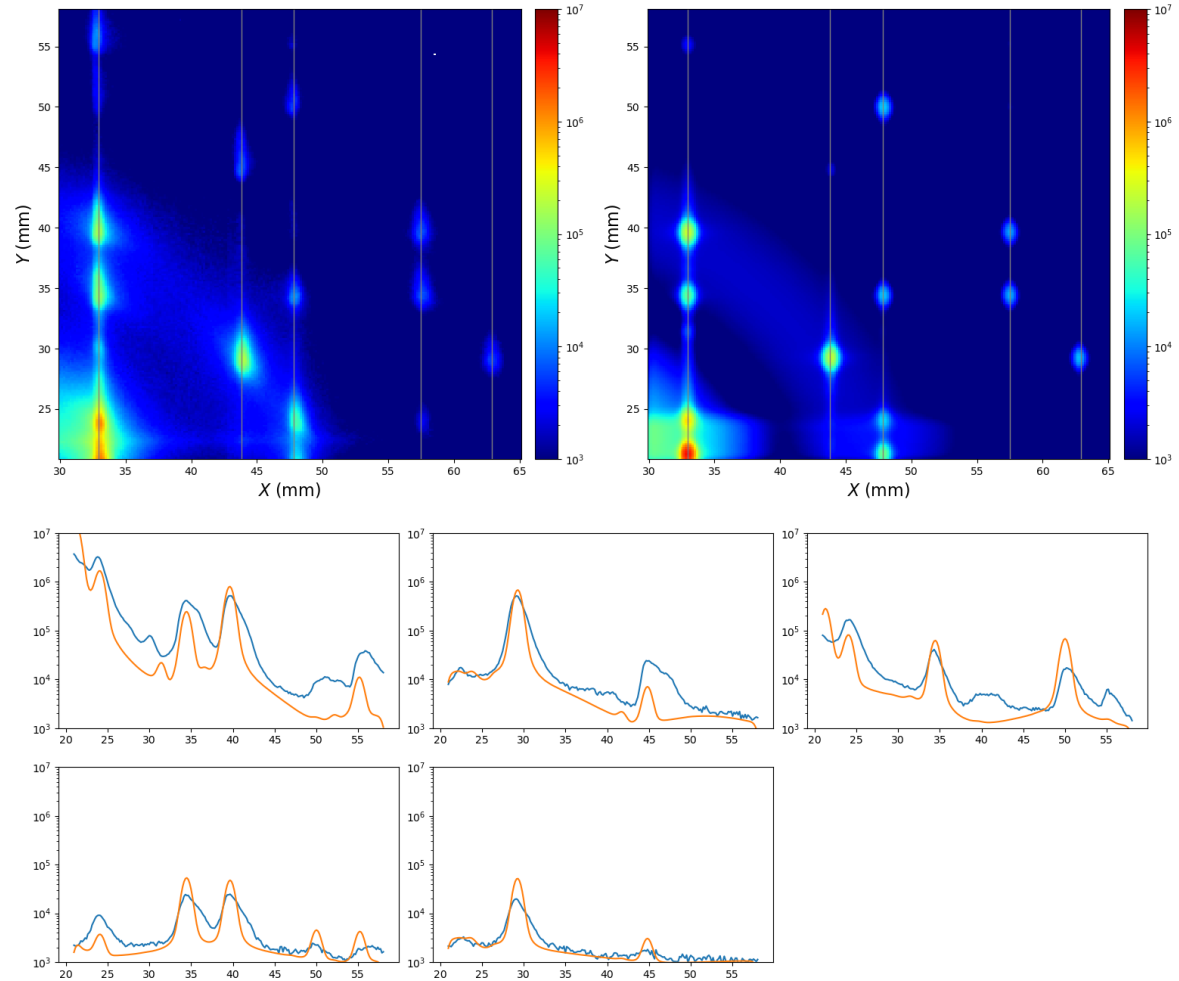
```
{
"sample_builder_type":  "SampleBuilderVer3",
"layouts":  [
"RandomSizeParticles",
"RandomMesoFactory"
],
"roughness":  2.0,
"average_layer_thickness":  1100,
"meso_elevation":  20,
"RandomMesoFactory":  {
"meso_count":  500,
"layout_weight":  0.02,
"surface_filling_ratio":  0.12,
"tilt_dtheta":  0.2
},
"meso_builder_type":  "FuzzyCylinder",
"lattice_length_a":  12.5,
"lattice_length_c":  31.1,
"nparticles":  10,
"nanoparticle_radius":  5.02,
"sigma_nanoparticle_radius":  0.3,
"meso_height":  200.0,
"meso_radius":  200.0,
"particle_pos_sigma":  0.3,
"rotation_x":  0.0,
"rotation_z":  0.0
}
```
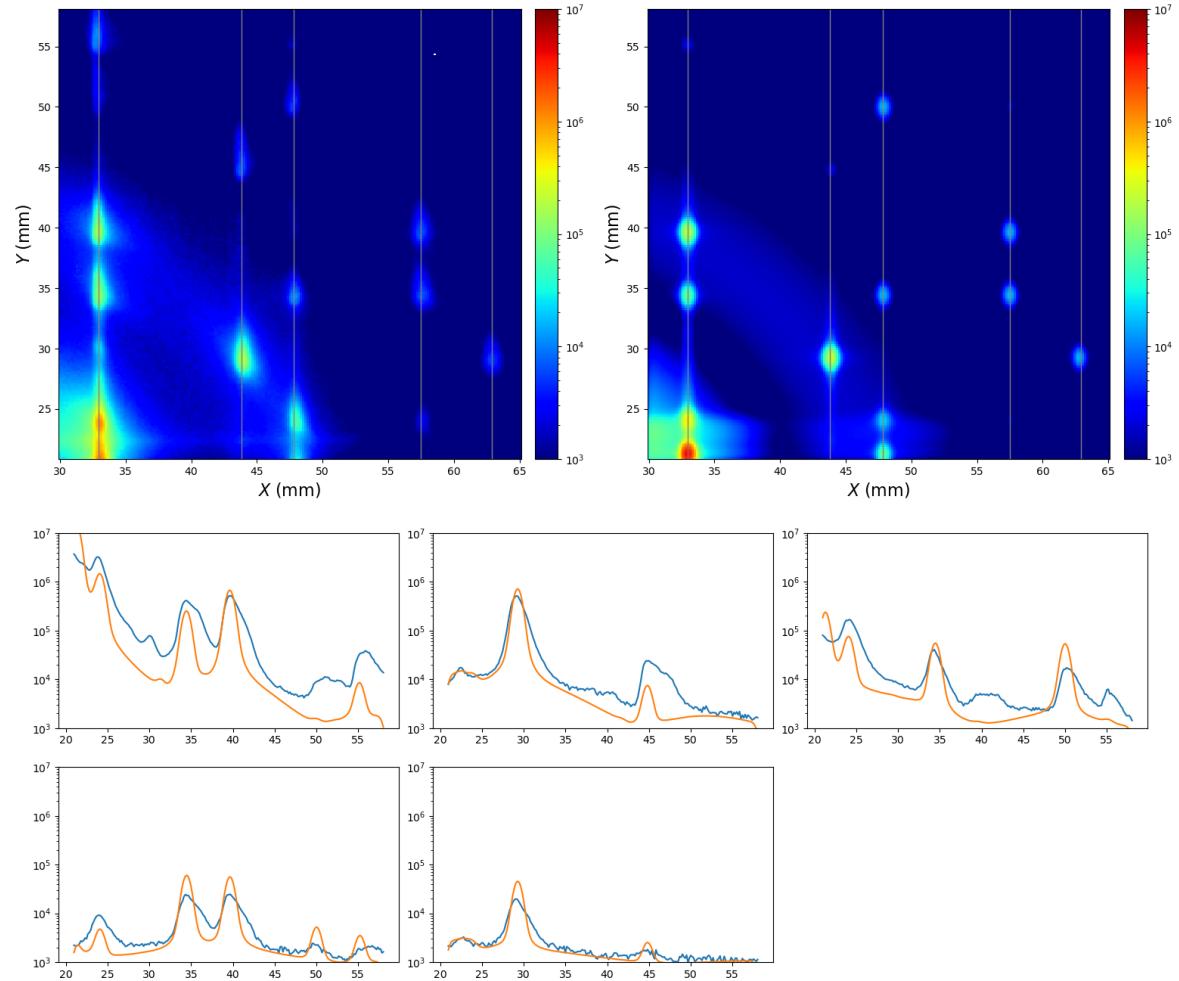
```
{
"sample_builder_type":  "SampleBuilderVer3",
"layouts":  [
"RandomSizeParticles",
"RandomMesoFactory"
],
"roughness":  4.0,
"average_layer_thickness":  1100,
"meso_elevation":  20,
"RandomMesoFactory":  {
"meso_count":  500,
"layout_weight":  0.02,
"surface_filling_ratio":  0.12,
"tilt_dtheta":  0.2
},
"meso_builder_type":  "FuzzyCylinder",
"lattice_length_a":  12.5,
"lattice_length_c":  31.1,
"nparticles":  10,
"nanoparticle_radius":  5.02,
"sigma_nanoparticle_radius":  0.3,
"meso_height":  200.0,
"meso_radius":  200.0,
"particle_pos_sigma":  0.3,
"rotation_x":  0.0,
"rotation_z":  0.0
}
```

```
{
"sample_builder_type":  "SampleBuilderVer3",
"layouts":  [
"RandomSizeParticles",
"RandomMesoFactory"
],
"roughness":  6.0,
"average_layer_thickness":  1100,
"meso_elevation":  20,
"RandomMesoFactory":  {
"meso_count":  500,
"layout_weight":  0.02,
"surface_filling_ratio":  0.12,
"tilt_dtheta":  0.2
},
"meso_builder_type":  "FuzzyCylinder",
"lattice_length_a":  12.5,
"lattice_length_c":  31.1,
"nparticles":  10,
"nanoparticle_radius":  5.02,
"sigma_nanoparticle_radius":  0.3,
"meso_height":  200.0,
"meso_radius":  200.0,
"particle_pos_sigma":  0.3,
"rotation_x":  0.0,
"rotation_z":  0.0
}
```
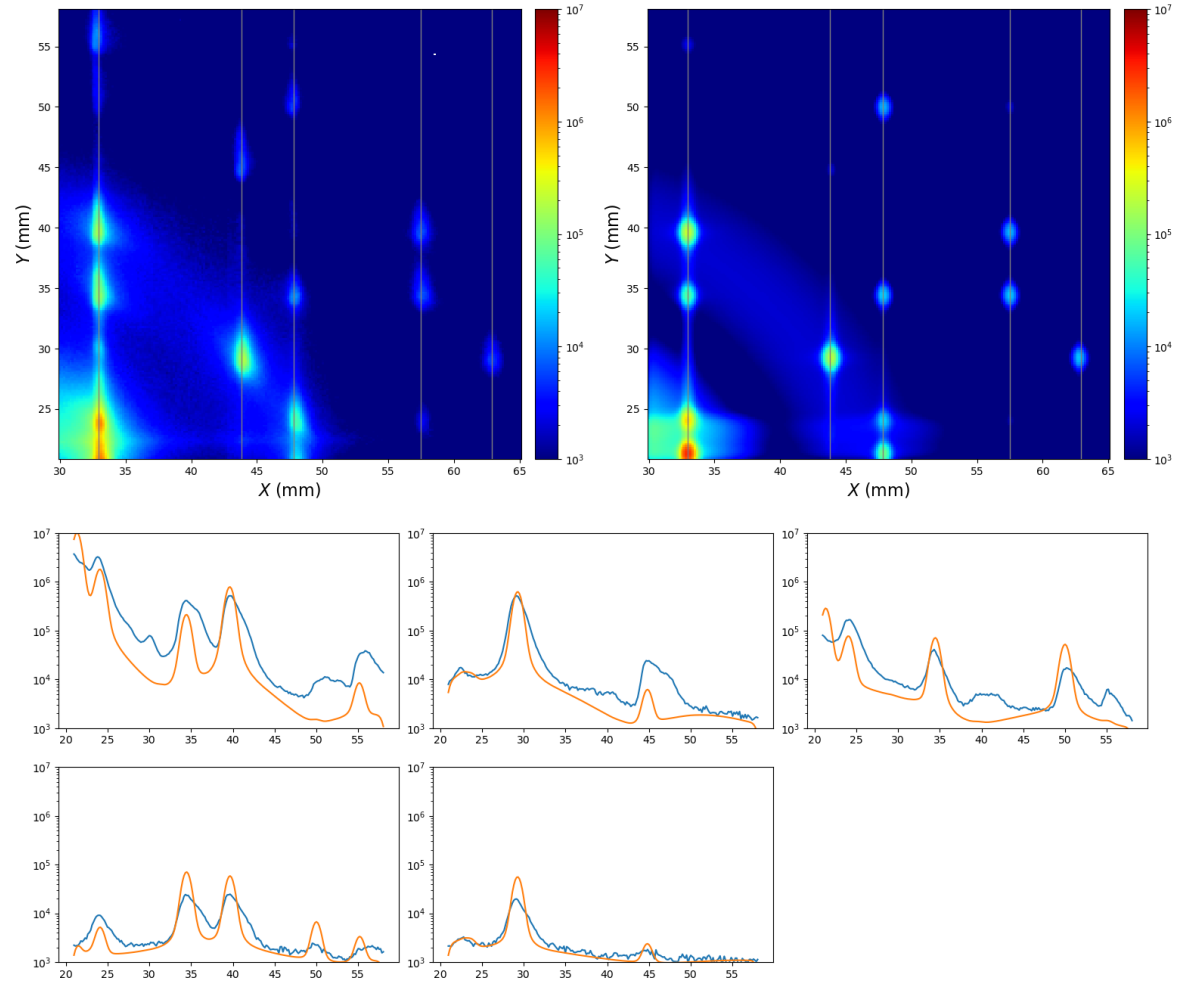
```
{
"sample_builder_type":  "SampleBuilderVer3",
"layouts":  [
"RandomSizeParticles",
"RandomMesoFactory"
],
"roughness":  8.0,
"average_layer_thickness":  1100,
"meso_elevation":  20,
"RandomMesoFactory":  {
"meso_count":  500,
"layout_weight":  0.02,
"surface_filling_ratio":  0.12,
"tilt_dtheta":  0.2
},
"meso_builder_type":  "FuzzyCylinder",
"lattice_length_a":  12.5,
"lattice_length_c":  31.1,
"nparticles":  10,
"nanoparticle_radius":  5.02,
"sigma_nanoparticle_radius":  0.3,
"meso_height":  200.0,
"meso_radius":  200.0,
"particle_pos_sigma":  0.3,
"rotation_x":  0.0,
"rotation_z":  0.0
}
```
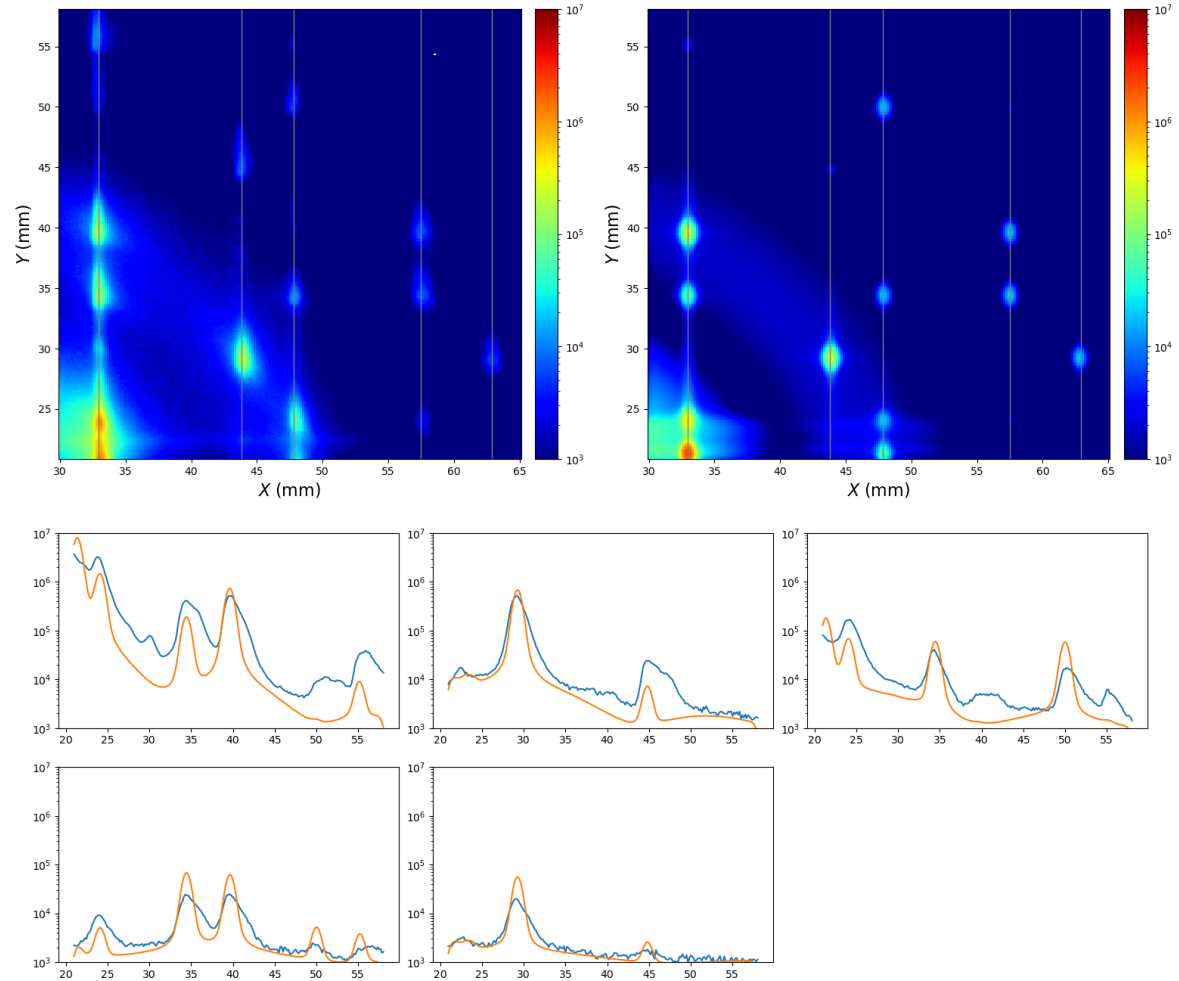
```
{
"sample_builder_type":  "SampleBuilderVer3",
"layouts":  [
"RandomSizeParticles",
"RandomMesoFactory"
],
"roughness":  10.0,
"average_layer_thickness":  1100,
"meso_elevation":  20,
"RandomMesoFactory":  {
"meso_count":  500,
"layout_weight":  0.02,
"surface_filling_ratio":  0.12,
"tilt_dtheta":  0.2
},
"meso_builder_type":  "FuzzyCylinder",
"lattice_length_a":  12.5,
"lattice_length_c":  31.1,
"nparticles":  10,
"nanoparticle_radius":  5.02,
"sigma_nanoparticle_radius":  0.3,
"meso_height":  200.0,
"meso_radius":  200.0,
"particle_pos_sigma":  0.3,
"rotation_x":  0.0,
"rotation_z":  0.0
}
```
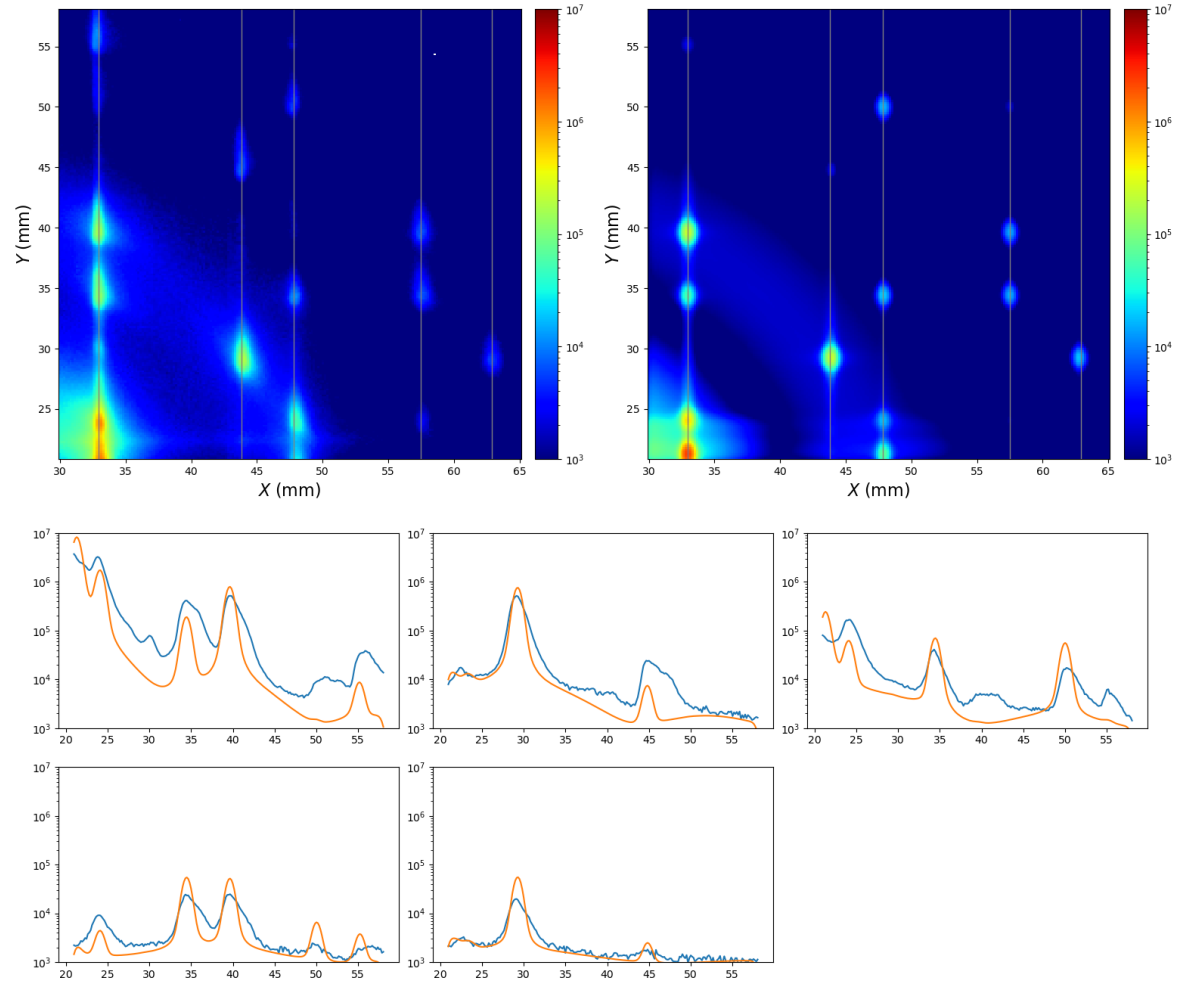
```
{
"sample_builder_type": "SampleBuilderVer3",
"layouts": [
"RandomSizeParticles",
"RandomMesoFactory"
],
"roughness": 12.0,
"average_layer_thickness": 1100,
"meso_elevation": 20,
"RandomMesoFactory": {
"meso_count": 500,
"layout_weight": 0.02,
"surface_filling_ratio": 0.12,
"tilt_dtheta": 0.2
},
"meso_builder_type": "FuzzyCylinder",
"lattice_length_a": 12.5,
"lattice_length_c": 31.1,
"nparticles": 10,
"nanoparticle_radius": 5.02,
"sigma_nanoparticle_radius": 0.3,
"meso_height": 200.0,
"meso_radius": 200.0,
"particle_pos_sigma": 0.3,
"rotation_x": 0.0,
"rotation_z": 0.0
}
```
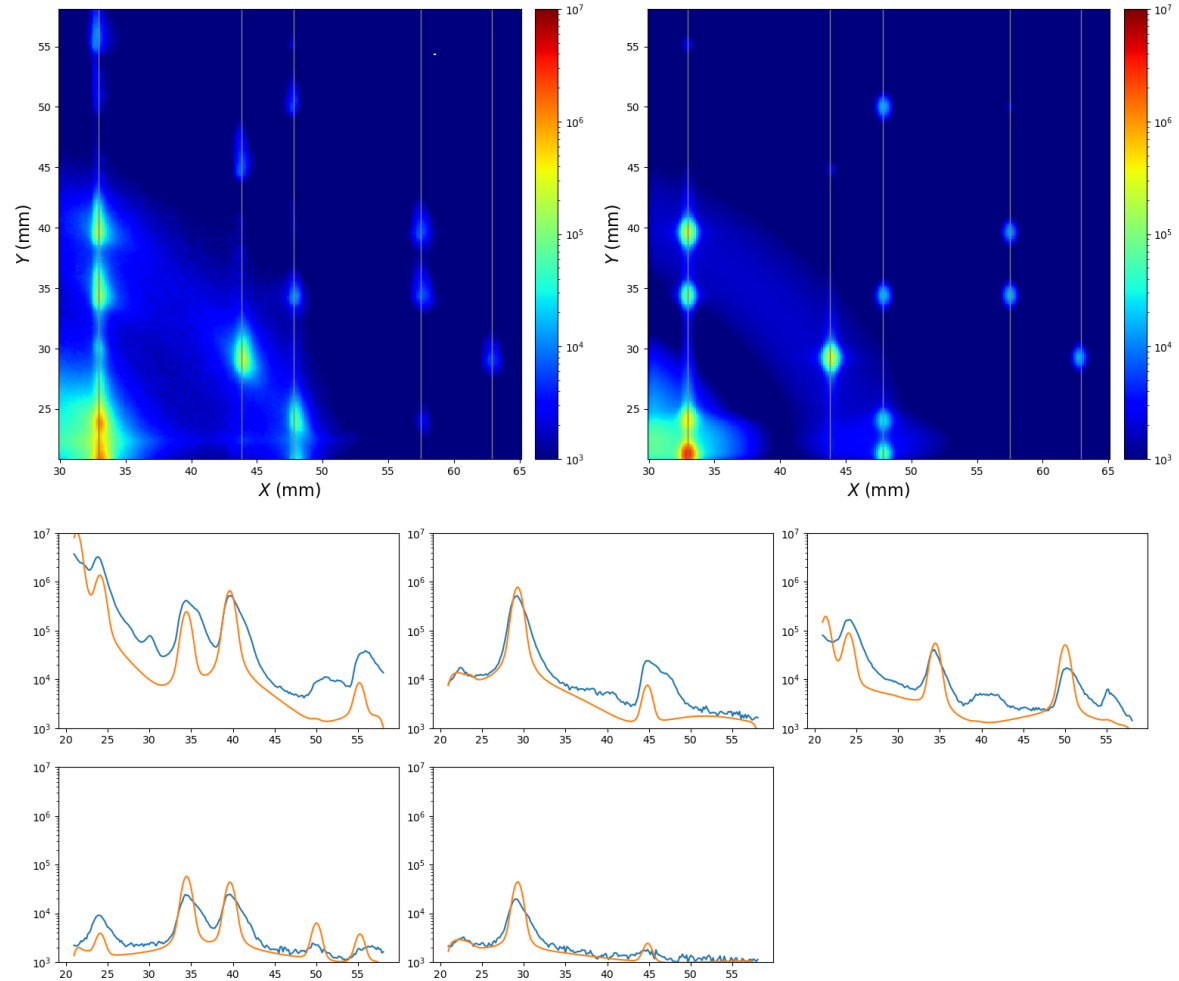
```
{
"sample_builder_type":  "SampleBuilderVer3",
"layouts":  [
"RandomSizeParticles",
"RandomMesoFactory"
],
"roughness":  16.0,
"average_layer_thickness":  1100,
"meso_elevation":  20,
"RandomMesoFactory":  {
"meso_count":  500,
"layout_weight":  0.02,
"surface_filling_ratio":  0.12,
"tilt_dtheta":  0.2
},
"meso_builder_type":  "FuzzyCylinder",
"lattice_length_a":  12.5,
"lattice_length_c":  31.1,
"nparticles":  10,
"nanoparticle_radius":  5.02,
"sigma_nanoparticle_radius":  0.3,
"meso_height":  200.0,
"meso_radius":  200.0,
"particle_pos_sigma":  0.3,
"rotation_x":  0.0,
"rotation_z":  0.0
}
```

```
{
"sample_builder_type":  "SampleBuilderVer3",
"layouts":  [
"RandomSizeParticles",
"RandomMesoFactory"
],
"roughness":  20.0,
"average_layer_thickness":  1100,
"meso_elevation":  20,
"RandomMesoFactory":  {
"meso_count":  500,
"layout_weight":  0.02,
"surface_filling_ratio":  0.12,
"tilt_dtheta":  0.2
},
"meso_builder_type":  "FuzzyCylinder",
"lattice_length_a":  12.5,
"lattice_length_c":  31.1,
"nparticles":  10,
"nanoparticle_radius":  5.02,
"sigma_nanoparticle_radius":  0.3,
"meso_height":  200.0,
"meso_radius":  200.0,
"particle_pos_sigma":  0.3,
"rotation_x":  0.0,
"rotation_z":  0.0
}
```