

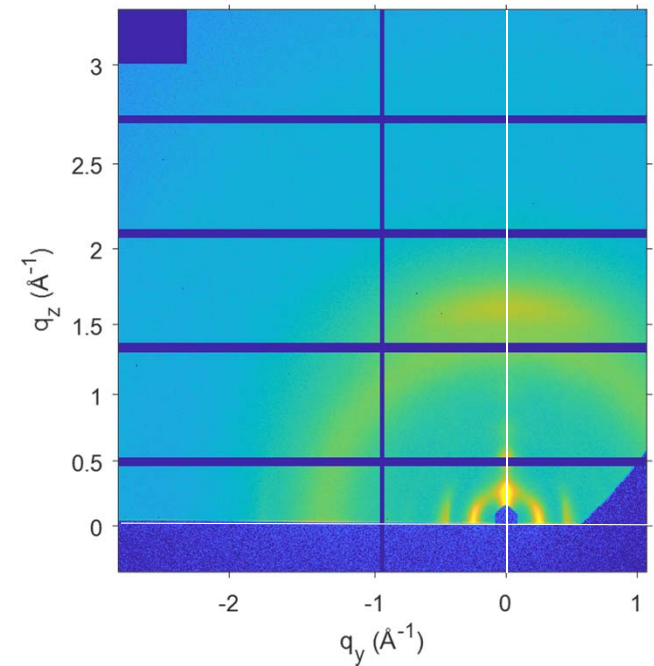
# GIXSGUI FAQ: My data looks tilted. What do I do?

2019.06.06

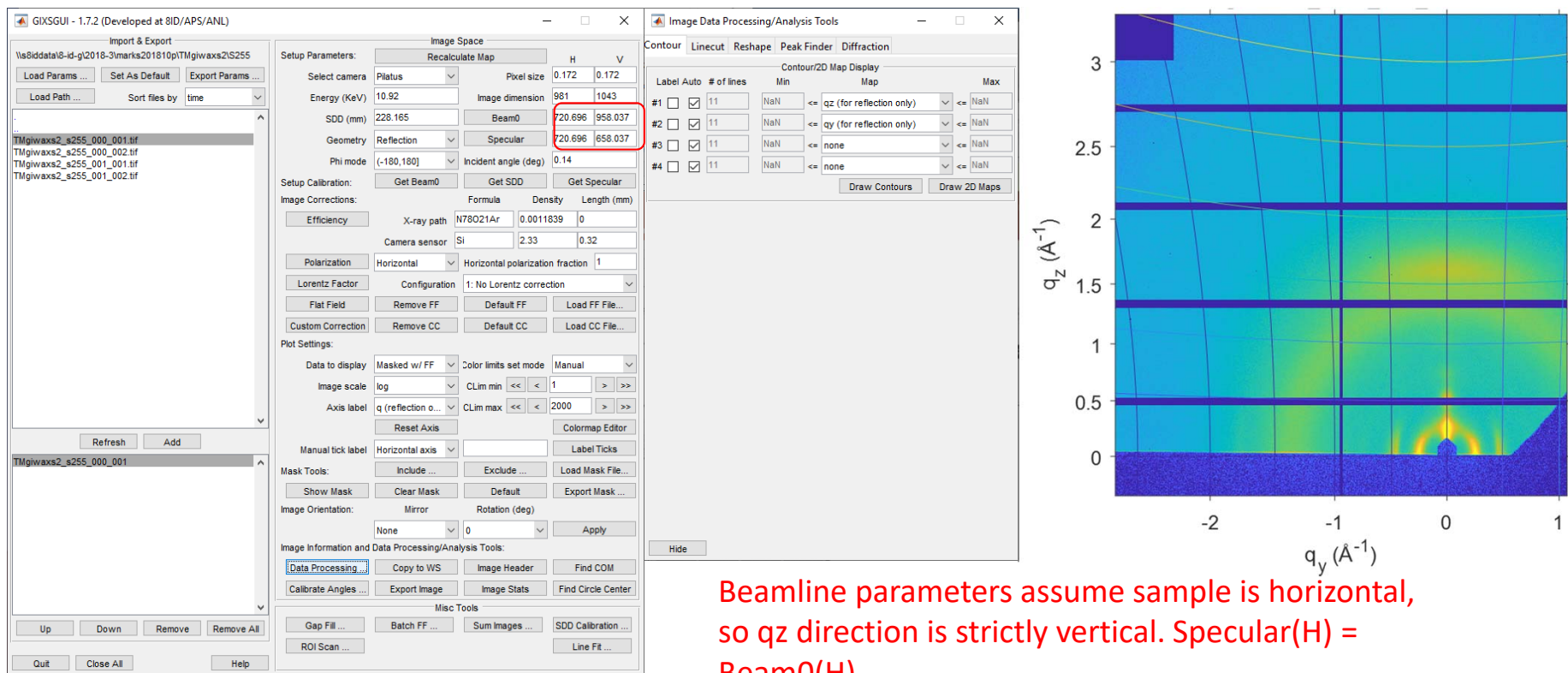
Joe Strzalka

# Q: My data looks tilted. What do I do?

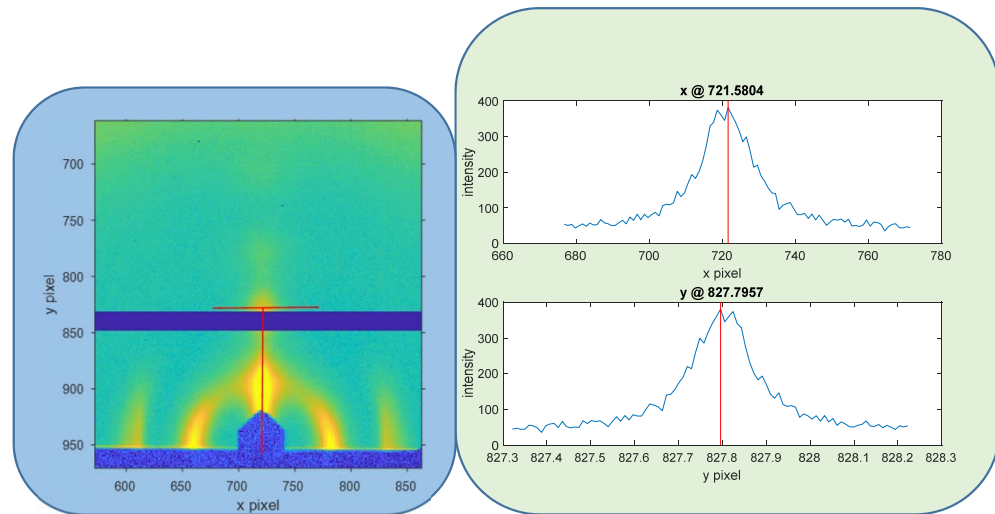
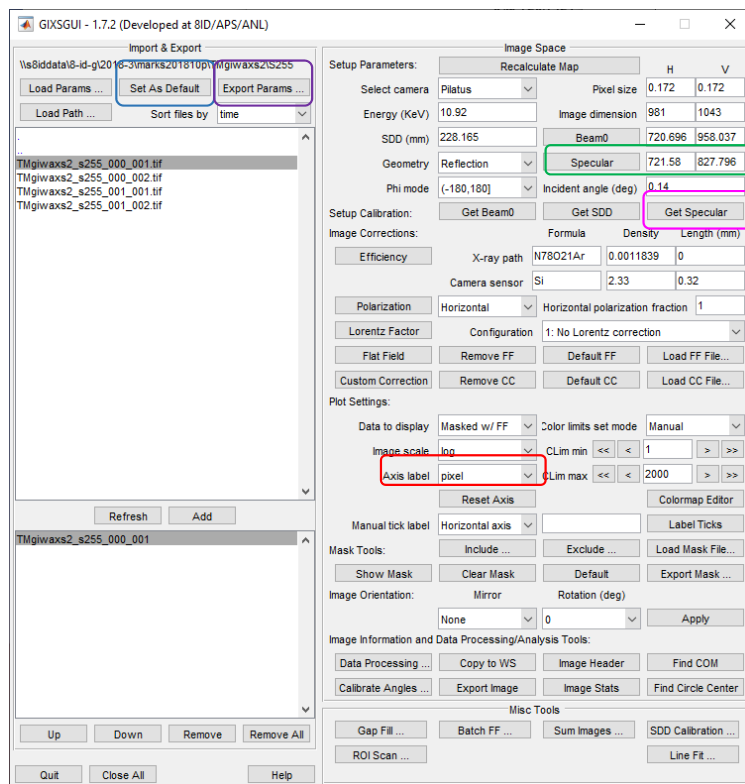
- 2D data appear slightly tilted (white axes are drawn using powerpoint to guide the eye. GIXSGUI cannot draw these axes).
- At the beamline, a negative increment in the sample roll (chi) will rotate the data counterclockwise.
- What can we do if the beamtime is over? What is the correct way to treat the data?



# Using the parameters from the beamline

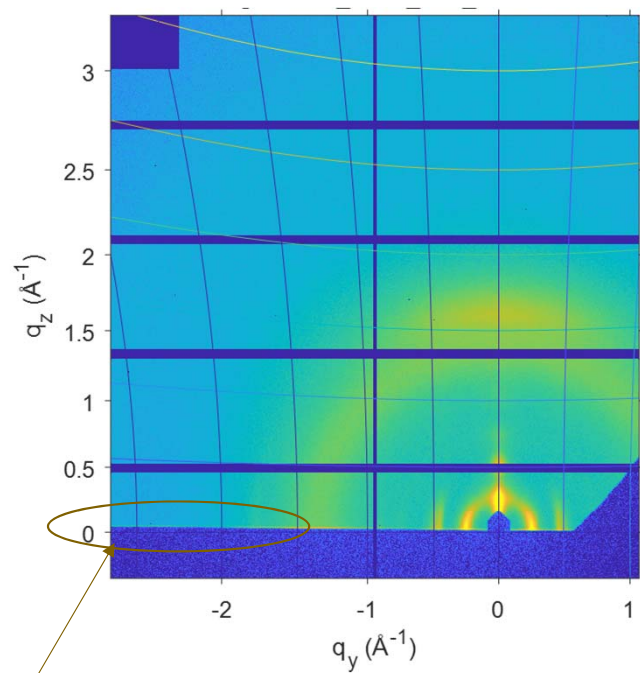


# Updating the parameters to account for tilt

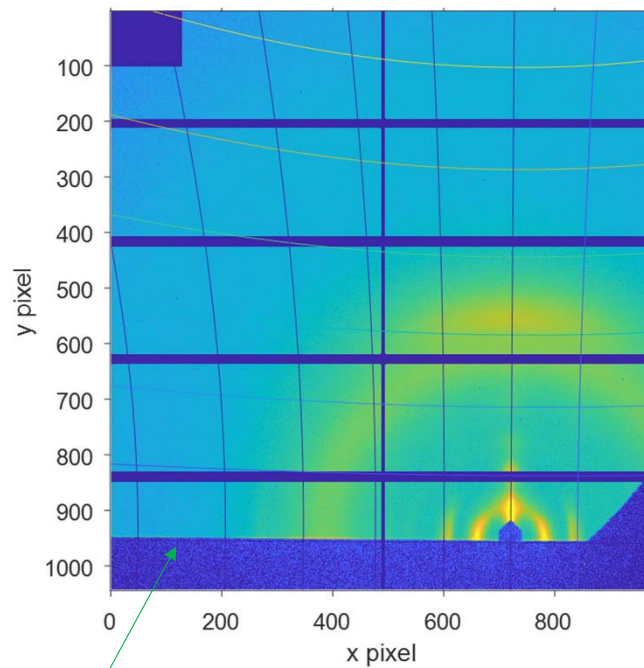


- Change axis label to "pixel".
- Zoom in on data near origin.
- Click "Get Specular". Left click one point on image on one side of specular ridge where there is good intensity. Right click on one point on the other side of the specular ridge.
- GIXSGUI determines center of specular and updates the Specular (H,V) parameters.
- Click "Set as Default" to keep these values for other datasets, and "Export Parameters" to a file for future use.

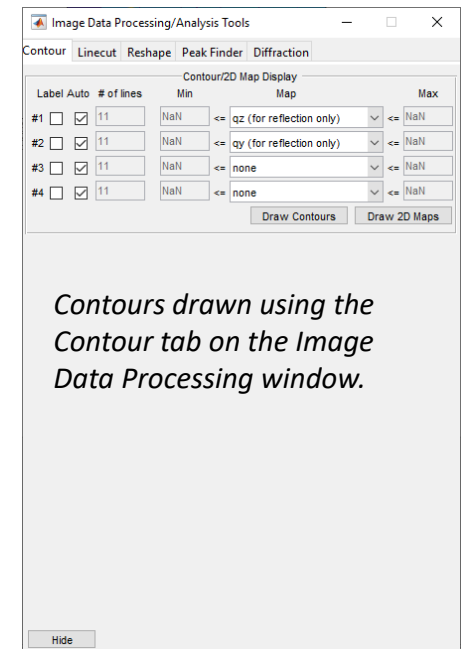
# Effects on q-maps



Original parameters show widening gap between Yoneda band and the  $q_z=0$  contour line.



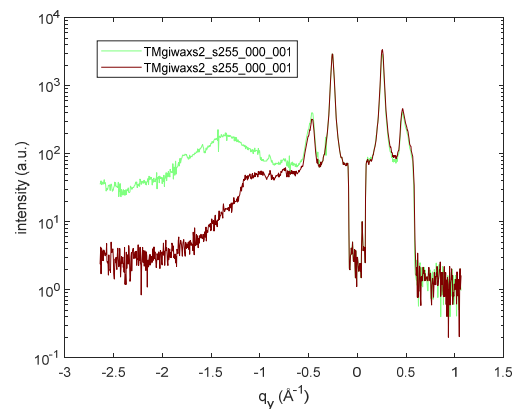
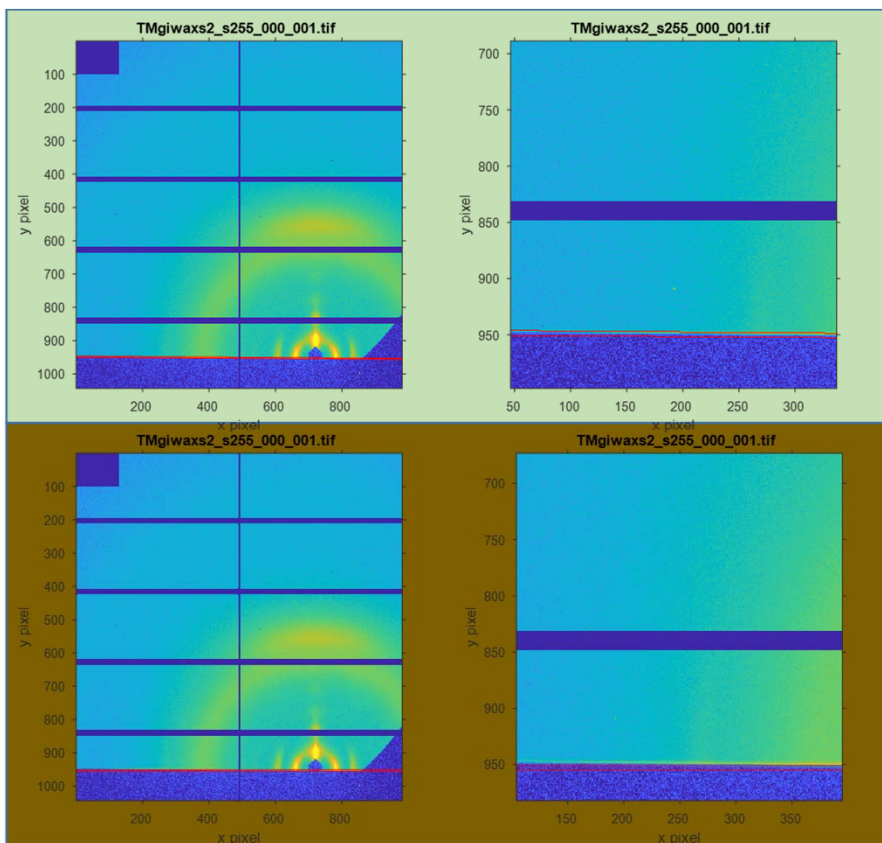
Updated parameters show  $q_z=0$  contour line parallel to Yoneda band.



# Effect on linecuts

2D data are not rotated, but GIXSGUI uses correct q-mapping when computing linecuts.

In example here, linecut with old parameters (brown) misses the Yoneda band at large q, but linecut with updated parameters (green) captures the Yoneda band at large q.



*Constrained Image button draws outline of region of integration for linecut.*

