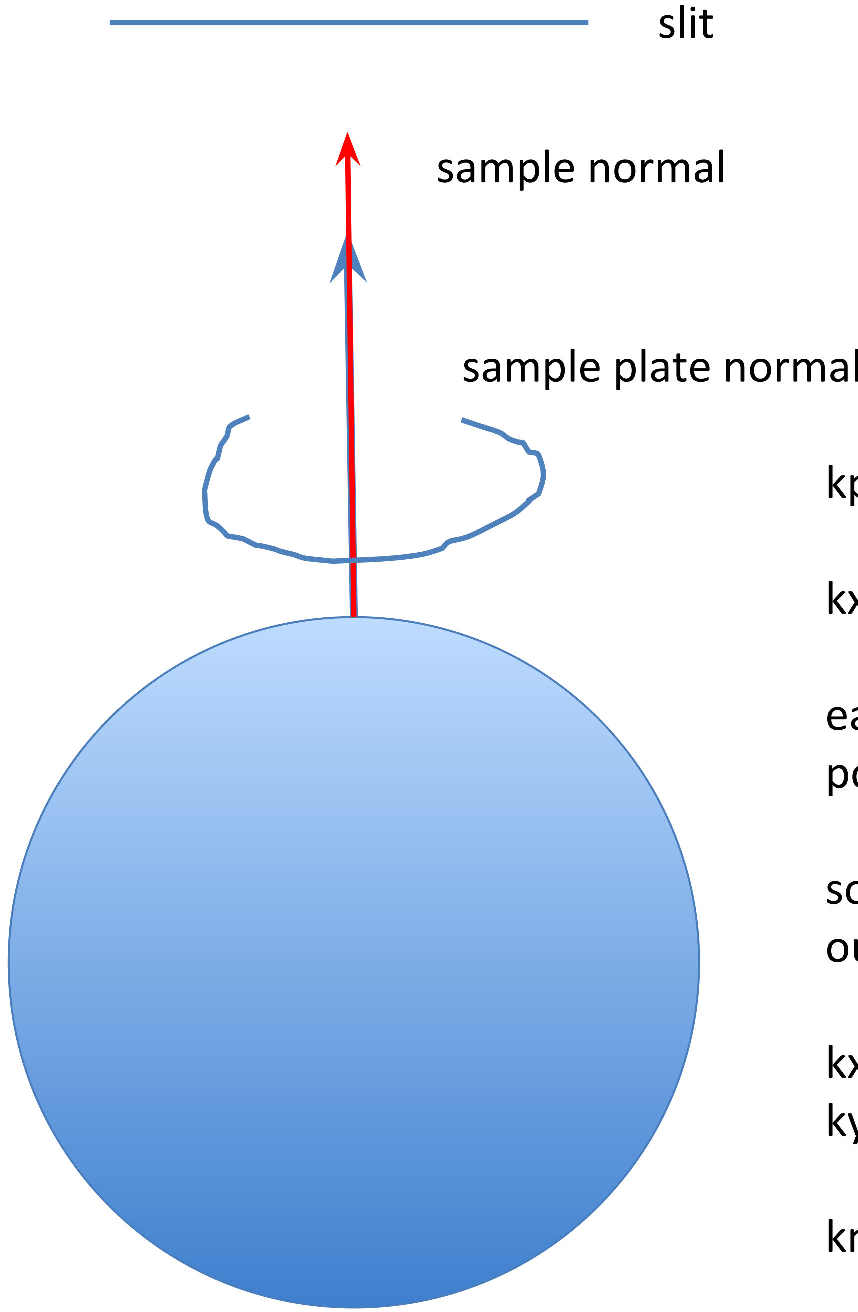
Everything ideal, then happy life!



kpar = k0 * sin(slitangle)

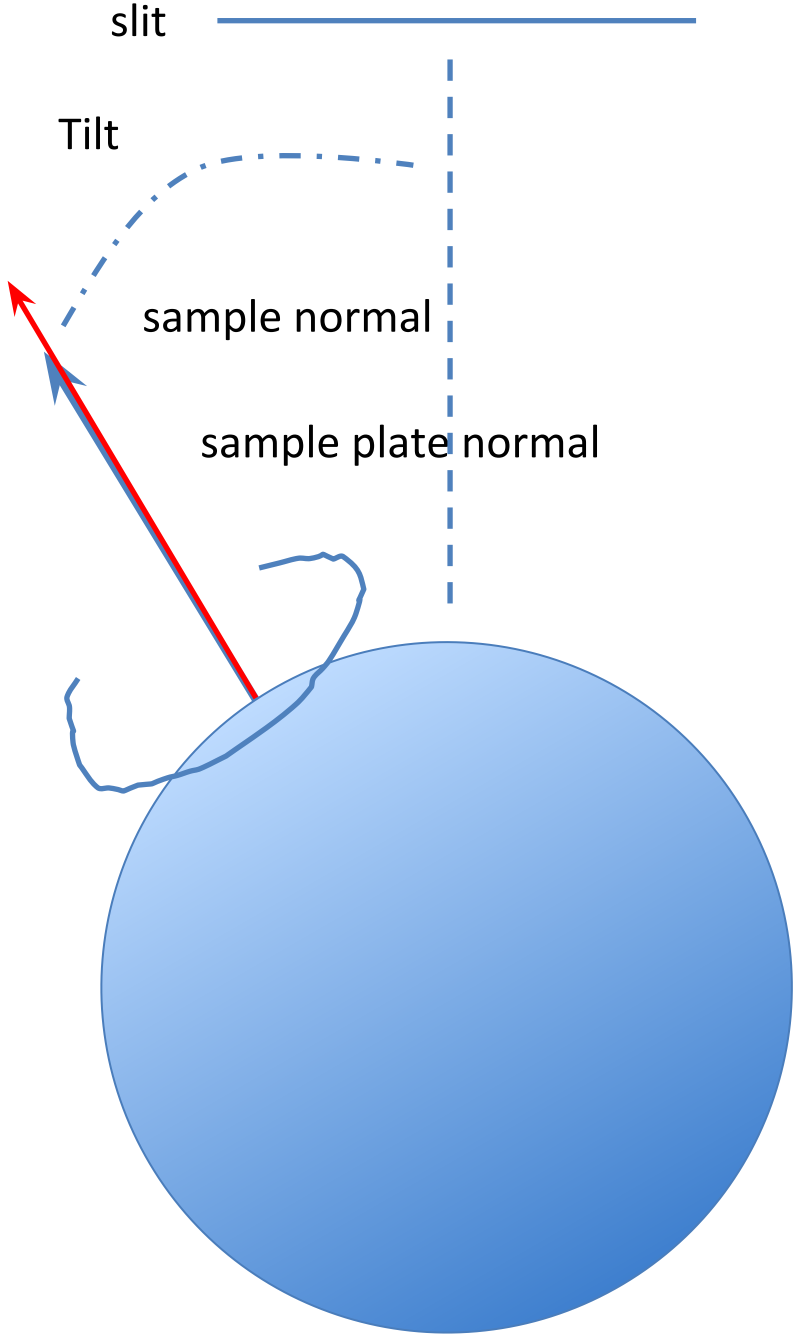
kx and ky are projected from kpar

each kpar has their own azimuthal position

so we can choose arbitrary azimuth as our center

kx = kpar * cos(azimuth – offset)
ky = kpar*sin(azimuth – offset)

knorm = k0*cos(slitangle)



Only tilt, still happy life!

kpar = k0 * sin(slitangle_offset)

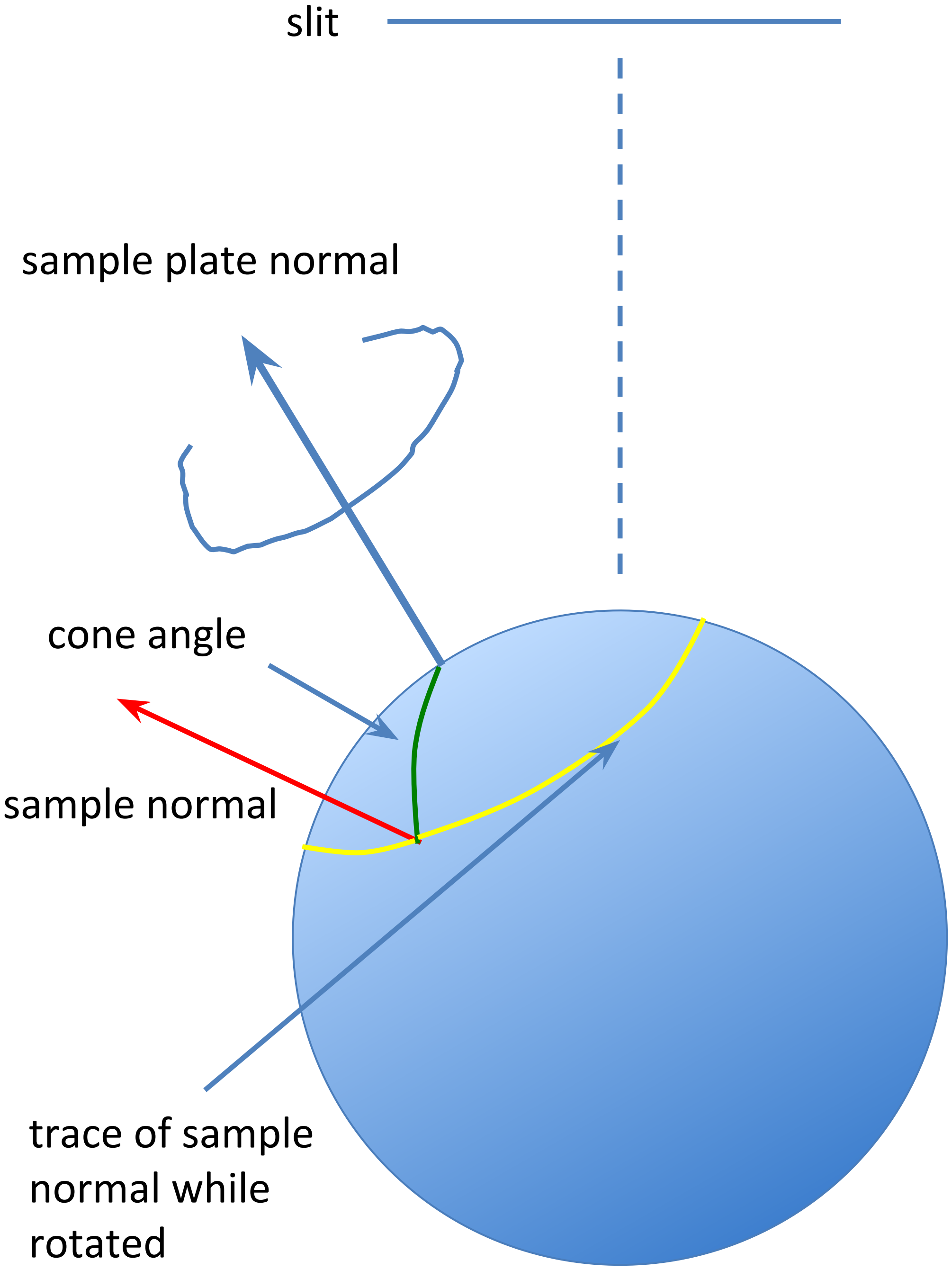
kx and ky are projected from kpar

each kpar has their own azimuthal position

so we can choose arbitrary azimuth as our center

kx = kpar * cos(azimuth – offset)
ky = kpar*sin(azimuth – offset)

knorm = k0*cos(slitangle_offset)



Tilt and sample cone,

still use the previous momentum component

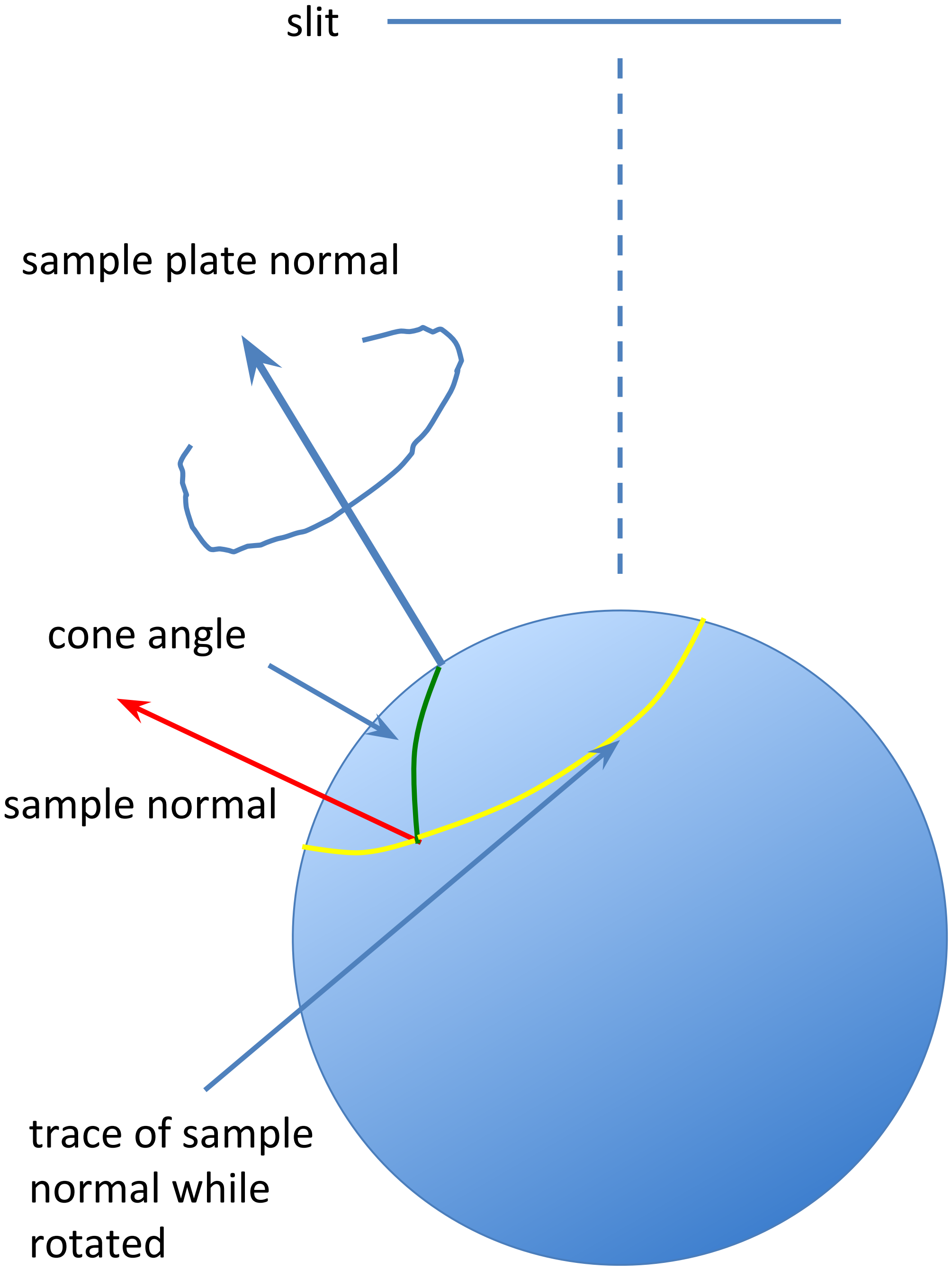
kpar = k0 * sin(slitangle_offset)
knorm = k0*cos(slitangle_offset)

this momentum are with respect to sample plate, in their respective azimuthal position

so to get the component of them in sample plane, we rotate their unit axis vector

X_sample =
R_cone * R_azimuth *X(sample_plate)

I assume that the original cut which contains Gamma point is the y.axis to follow our convention



Tilt and sample cone,

so we use the program called

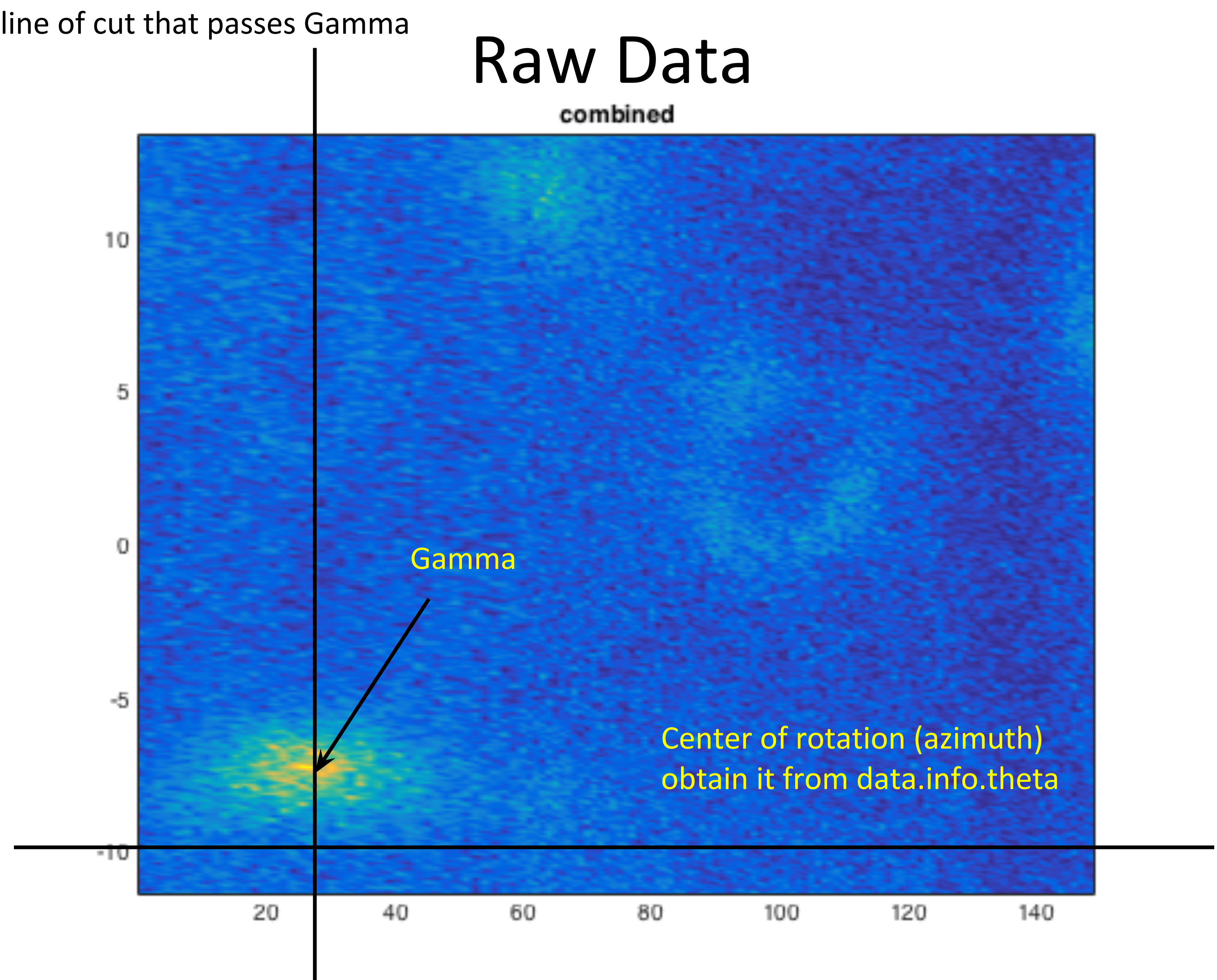
kSpaceConversionFromPolar_v2

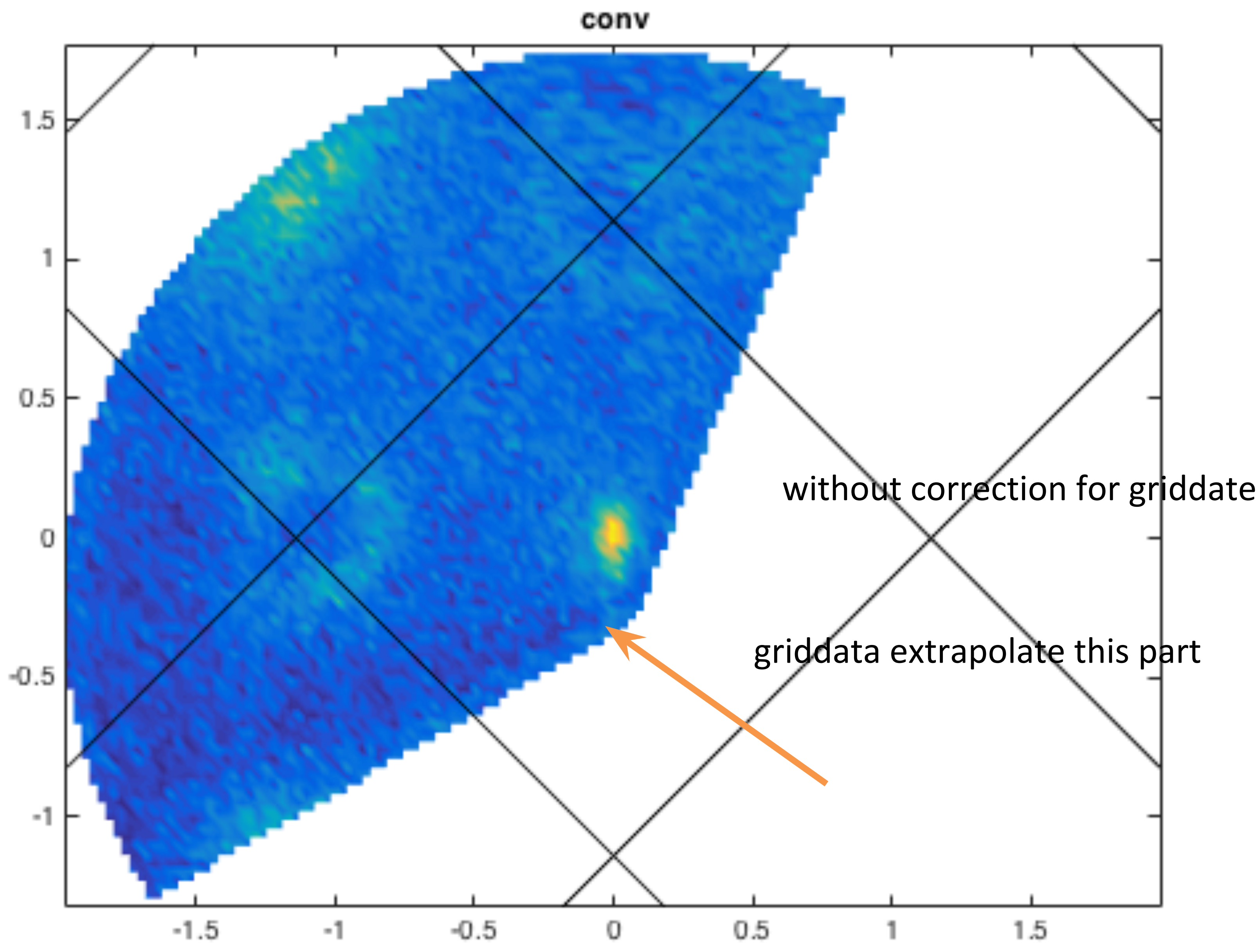
with input:

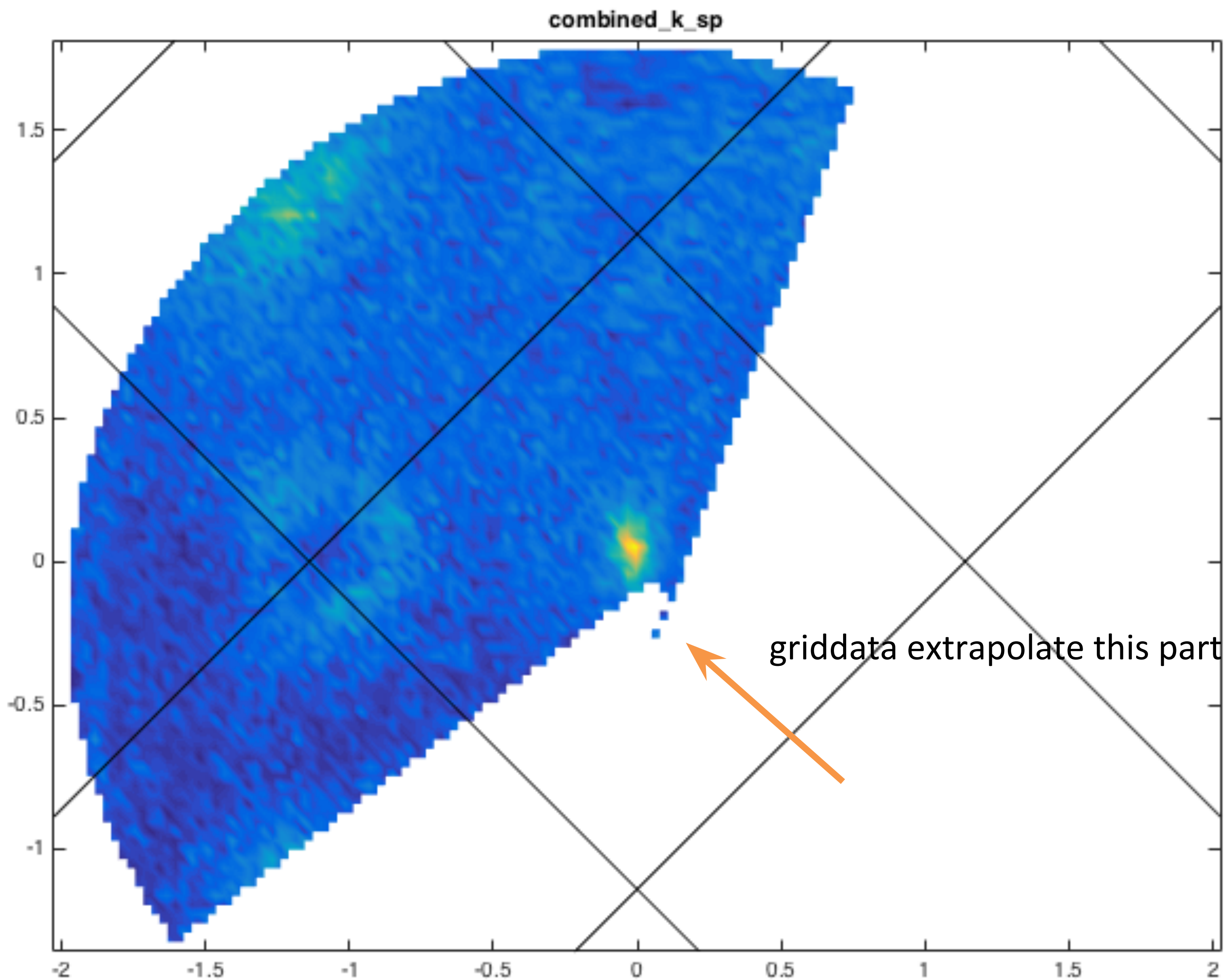
- data
- cone_angle
- cone_angle_azimuthposition
- lattice constant
- #kx
- #ky

We don’t need to worry about tilt because it is recorded in the data inside data.info.theta

Raw Data


line of cut that passes Gamma
combined
10
5
0
-5
-10
20
40
60
80
100
120
140
Gamma
Center of rotation (azimuth)
obtain it from data.info.theta


conv
1.5
1
0.5
0
-0.5
-1
-1.5
-1
-0.5
0
0.5
1
1.5
without correction for griddate
griddata extrapolate this part


combined_k_sp
1.5
1
0.5
0
-0.5
-1
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
griddata extrapolate this part