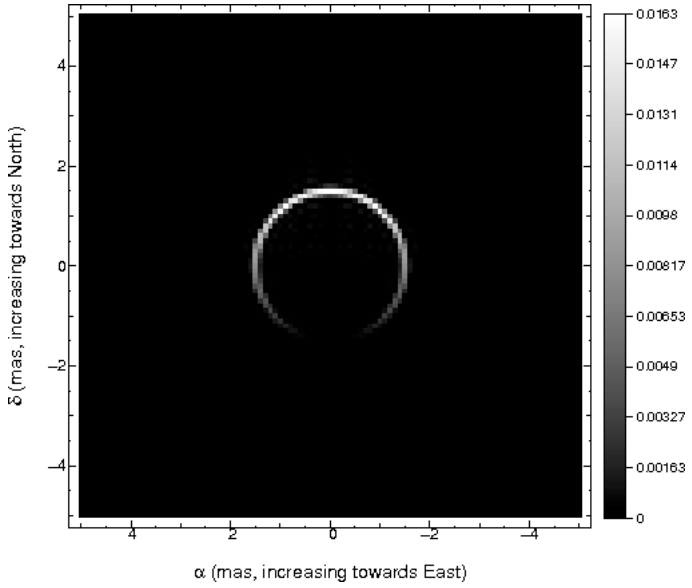
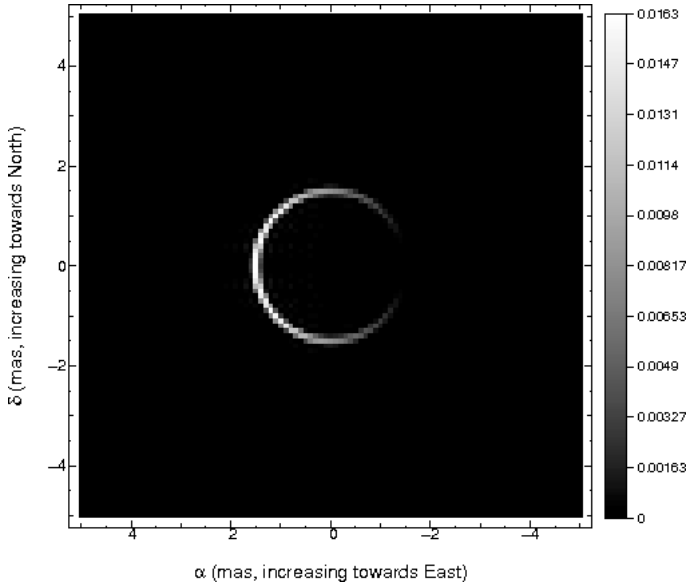
Nouvelles fonctions modèles géométriques :

func lpb_**modulated_circle**(ufreq, vfreq, flux_weight, x, y, diameter,top_pos_angle)

to do : - introduire paramètre p = profondeur de modulation (1+ p cos(θ))
- modulation multiple ? (1+ p cos(nθ))



top_pos_angle = 0°

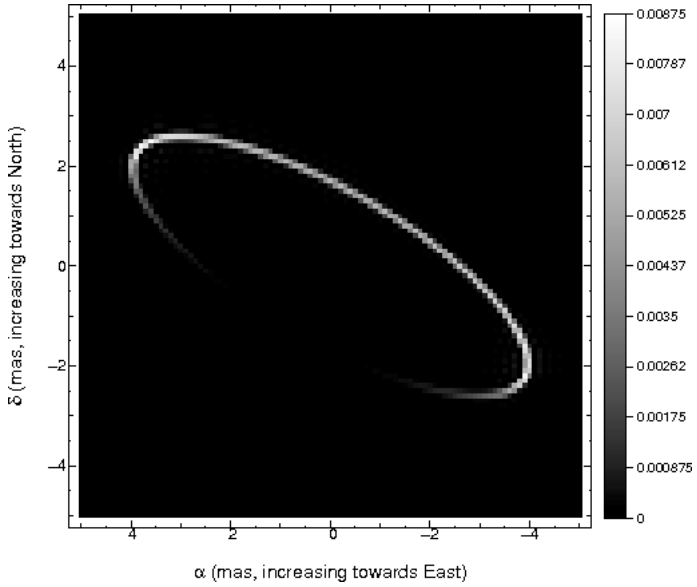


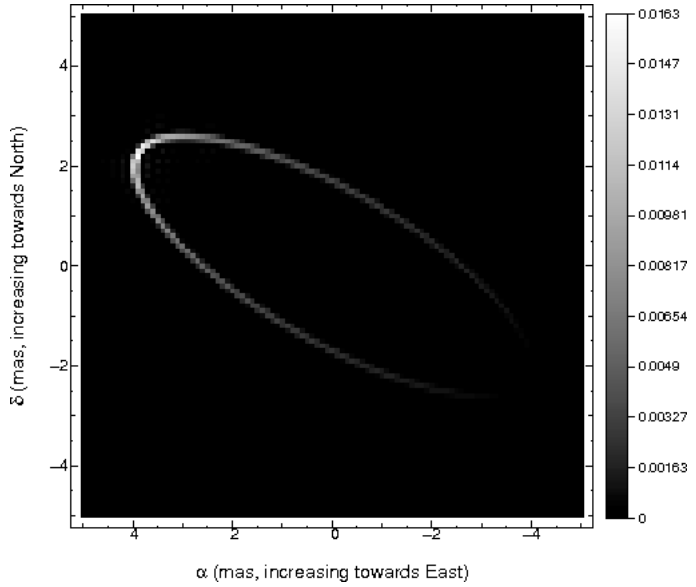
top_pos_angle = 90°

lpb_**stretched_modulated_circle**(ufreq, vfreq, flux_weight, x, y, diameter, top_pos_angle,
stretch_ratio, stretch_pos_angle)

stretch_ratio peut être inférieur ou supérieur à 1

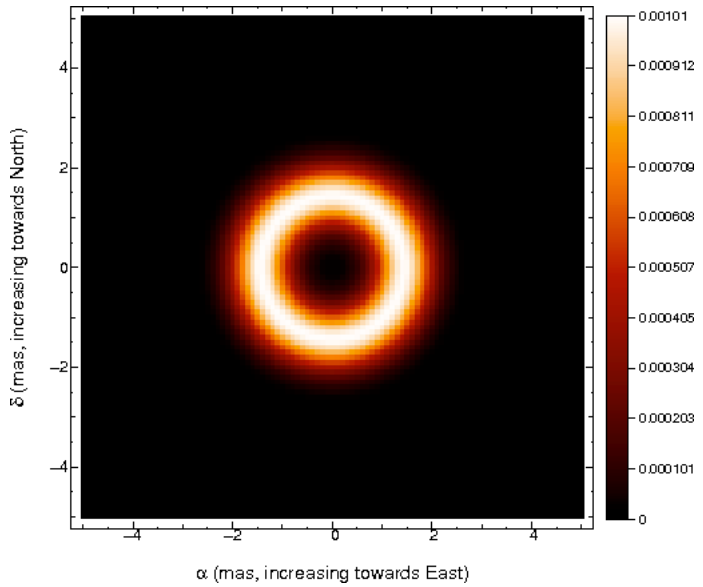
angle d'inclinaison = 1/ cos (b/a)





lpb_**gaussian_ring**(ufreq, vfreq, flux_weight,x,y,diameter,fwhm)

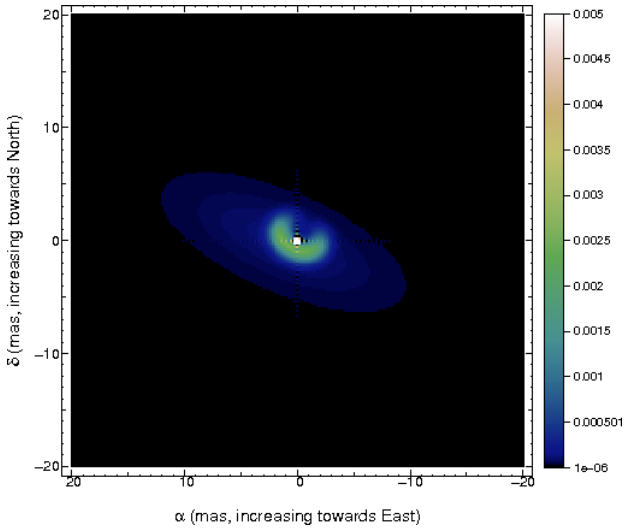
= lpb_circle convoluée par un profil gaussien de FWHM=fwhm
diameter = diamètre de l'anneau = 2 x distance (centre, maximum du profl radial gaussien)



Autres Fonctions composées à partir des fonctions élémentaires précédentes :

lpb_stretched_gaussian()
lpb_stretched_gaussian_ring()
lpb_stretched_modulated_circle()
lpb_stretched_modulated_gaussian_ring()

utilisées pour le fit de MWC158



A été insérée dans LITpro la loi de Planck

➞ ajout de nouvelles fonctions '_BB' (black-body)

- *lpb_punct_BB()* *Single point (Dirac function) with black body emission*
- *lpb_disk_BB()*
- *lpb_elong_disk_BB()*
- *lpb_stretched_gaussian_BB()*
- *lpb_stretched_tilted_gaussian_ring_BB()*

➞ à une brique modèle peut être associée une Température liée aux longueurs d'onde

mais 'pb' / normalisation

Est-il intéressant de proposer de telles fonctions via le GUI ?

Nouvelle fonction pour explorer l'espace des χ^2 (doit remplacer à terme sniffer_map)
mais implantation non immédiate (exemples + doc)

lp_**chi2_probe**, world, x="p1", ..., keyword=value, ...
lp_chi2_probe, world, x="p1", y="p2", ..., keyword=value, ...

Computes (and plots) a 1D or 2D chi2 map versus 1 or 2 parameters of the model defined in world. These parameters are called "gridded parameters". For each point of the map (thus for the new corresponding starting values of the gridded parameters), a new fit is run. This may yield a huge amount of computation time, so it is advised to fit a limited number of parameters and to fix the others. Take care that the 1 or 2 gridded parameters will be also fitted (thus modified !) if not fixed.

For each new starting values of the gridded parameters, the initial guess for the fitted parameters are the ones resulting from the fit from the nearest values of the gridded parameters. This choise aims at limiting the amount of computation. Setting keyword CAUTIOUS to 1 will enforce the fitted parameters to always start from the values set before calling the function.

The results are stored in WORLD. Sister functions can be used to analyze the results:

lp_chi2_probe_plot - plots the maps of chi2 or of any parameter that was fitted.
lp_chi2_probe_show - report on minima, fitted parameters.
lp_chi2_probe_parameters - returns the parameters for a given minimum.

Examples:

lp_chi2_probe, world, x="diameter", xmin=0, xmax=20, xsampling=21

This will run new fits for all the starting values of "diameter", 0, 1, ..., 21. The curve of chi2 versus "diameter" will be plotted.

lp_chi2_probe, world, x="x1", y="y1", xsampling=10, ysampling=10

This will start new fits for any value of the parameters "x1" and "y1" on the 10x10 grid between the bounds of "x1" and "y1". The map chi2 versus "x1" and "y1" will be plotted.

While running, the function displays any chi2 value lower than the one obtained so far (unless keyword QUIET is set), with their corresponding coordinates in the map. The function also displays a list of the NB_MIN (default to 6) lowest values of the chi2 with their corresponding coordinates in the map.