therpy – list of functions and classes

* numder\_poly
* numder\_gaussian\_filter
* area\_partial\_ellipse
* interp\_od (required base function and file downloader)
* thermal\_wavelength
* density\_ideal, density\_virial, density\_unitary (and file downloader)
* FermiFunction (4 helper functions)
* Thomas\_Fermi\_harmonic
* fitfun\_TF\_harmonic
* ThomasFermiCentering
* FermiDirac
* betamu2n
* FermiDiracFit
* rabi\_resonance
* qTextEditDictIO
* get\_cropi
* get\_od
* fix\_od
* get\_usable\_pixels
* com
* box\_sharpness
* plot\_crop
* fun\_gaussian
* fit\_gaussian
* gaussian\_2d
* surface\_fit
* getFileList
* getpath
* binbyx
* binbyx\_array\_equal
* binbyx\_array
* subsampleavg
* subsample2D
* savitzky\_golay
* Image
* XSectionHybrid
* Hybrid\_Image
* Curve
* AbsImage (demoted)
* XSectionTop (demoted)
* ODFix2D (demoted)
* OD2Density (demoted)
* cst
* HybridEoS\_avg
* dictio
* LithiumImagingSimulator (and particle, calc\_I, calc\_n, calc\_sim\_results)

theypy – scientific functions, physical/mathematical

* thermal\_wavelength (deBroglie\_wavelength)
* fermi\_function [modular class – function ()]
* …………\_fermi\_gas: ideal, virial, unitary [modular class – function n(beta,mu)]
* lithium\_absorption\_od

therpy – usual functions

* gaussian
* gaussian\_2d
* error\_function
* box\_edges
* area\_ellipse\_special

# Curve

|  |  |
| --- | --- |
| Property Name | Information |
| x, y |  |
| data |  |
| plotdata |  |
| xscale, yscale |  |
| minx, miny |  |
| maxx, maxy |  |
|  |  |
|  |  |
|  |  |
|  |  |

|  |  |
| --- | --- |
| Method Name | Information |
| \_\_init\_\_ | provide x and/or y data (will be copied as 1d np.array)  optionally provide xscale, yscale |
| \_\_call\_\_ | given the x value, it returns the interpolated y value |
| \_\_str\_\_ | some useful information about the curve data |
| iloc | provide x or y value, it will output nearest indice for it |
| trim, chop, subset | provide xlim and/or ylim, it will remove points that lie outside |
| interp | similar to \_\_call\_\_, but with more options |
| inverse | given the y value, it will return the interpolated x value |
| sortbyx | re-arranges the data with ordered x values |
| binbyx |  |
| subsample |  |
| removenan |  |
| copy |  |
| diff, deriv |  |
| integrate |  |
| fit |  |
|  |  |
|  |  |
|  |  |
|  |  |