
bifrostDocs Documentation

Release 1.0

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Contents:

This library is a superclass of Helita. Helita documentation can be found <http://helita.readthedocs.io/en/latest/index.html>

1.1 EbysusData class

ebysus.py includes the EbysusData class (among others) which is needed for atom_tools.

1.2 BifrostData class

bifrost.py includes the EbysusData class (among others) which is needed for atom_tools.

1.3 atom_tools class

Reads and handles data from atom files in Ebysus format.

```
[8]: from br_py import atom_tools as at
```

```
[9]: # The following creates from a Bifrost models to MFMS atmosphere in statistical_
      ↪ equilibrium.
```

```
elements=['h','he']
atomfiles=['H_2.atom','He_2.atom']
nlevels=[2,2]
#density          = 1.10e-8    # g/cm3
ntot  = 1e10
units = u()
```

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```
dd=br.BifrostData('rootname',snap=7)
rho= dd.get_var('r',snap=7)*units.u_r
Temp= dd.get_var('tg',mf_ispecies=1,mf_ilevel=2,snap=7)
popco=at.pop_over_species_atomf([rho/units.m_H*units.mu],[Temp],atomfiles=atomfiles,
    ↪GENCOL_KEY='voronov',threebody=True)

for isp in range(0,2):
    heat=at.atom_tools(atom_file=atomfiles[isp])
    atomweight = heat.params['weight']*u.AMU.value
    nlevel = heat.params['nk']
    for i in range(0,nlevel):
        if (isp == 0):
            popc = popco['h'][0,:,0,:,i]
        else:
            popc = popco['he'][0,:,0,:,i]
```