NCAS analysis and visualisation tools
cf-python and cf-plot
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cf-python
A python package which creates, reads, writes and manipulates data and its metadata. It is fully compliant with the CF (Climate and Forecast) metadata conventions and can read data stored in CF-netCDF, Met Office (UK) PP format files and Met Office (UK) fields files.

It implements Large Amounts of Massive Arrays (LAMA) functionality, which allows multiple fields larger than the available memory to be manipulated without any extra work from the user.

Uses the ESMF regridding engine for fast conservative regridding.

cf-plot
A python package that uses the metadata in a CF field to create an appropriate contour, vector or line plot. The package allows easy user control of colour tables and plot positioning.
```python
>>> import cf, cfplot as cfp
>>> f = cf.read('tas_A1.nc')
>>> cfp.con(f.subspace(time=15))
```
```python
>>> U = cf.read('ggap.nc', select='eastward_wind')
>>> U_500 = U.subspace(pressure=500)

>>> cfp.mapset(proj='npstere')
>>> cfp.con(U_500)
```
```python
>>> zonal_mean=U.collapse('X: mean')

>>> cfp.con(zonal_mean, ylog=True)
```
```python
>>> U_500_mean = U_500.collapse('X: mean')
>>> cfp.lineplot(U_500_mean)
```
```python
>>> rotated = cf.read('rgp.nc')[0]
>>> cfp.cscale('plasma')
>>> U_1000 = U.subspace(pressure=1000)
>>> global = rotated.regrids(U_1000)
>>> cfp.con(rotated)
>>> cfp.con(global)
```
Future Developments

• **cf-python** performance optimisations (parallelisation)
• **cf-view** – gui interface to cf-python and cf-plot – pre-release version available on JASMIN SCI servers