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# FLICKER

Jan 21, 2020



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*FLICKER* is a tool to calculate Flicker value of a lightcurve.

Example usage On single lightcurve from one observing quarter:

```
import numpy as np
import FLICKER as flc

# Create a simple 100-day lightcurve with 15 day period
time=np.linspace(0,100,1000) # time array [days]
flux=np.sin(2*np.pi*time/15.)+np.random.rand(len(time)) # flux array

# get flicker value
flicker=flc.Flicker(time,flux)

print(flicker)
>> 0.1770736690463002
```

This function will return the median flicker value if input is multiple lightcurves from multiple observing quarters:

```
# Create 10 lightcurves with observing time span
time=[] for i in range(10) # empty list to put multiple lightcurves
flux=[] for i in range(10) # empty list to put multiple lightcurves
for i in range(10):
    t_sp=np.random.randint(10,200) # random timespan from 10-200 days
    time[i]=np.linspace(0,t_sp,1000) # time array [days]
    flux[i]=np.sin(2*np.pi*time[i]/15.)+np.random.rand(len(time[i])) # flux array

# get flicker value
flicker=flc.Flicker(time,flux)
print(flicker)
>> 0.2111953677723607
```



## 1.1 Installation

From source:

```
git clone https://github.com/lyx12311/FLICKER.git
cd FLICKER
python setup.py install
```

### 1.1.1 Dependencies

The dependencies of *FLICKER* are NumPy, pandas.

These can be installed using pip:

```
pip install numpy pandas
```

## 1.2 Running tests

## 1.3 API documentation

**FLICKER.SingleFlicker** (*time, flux, Time=8*)

Calculate Flicker value for a single lightcurve.

### Parameters

- **time** (*[array-like]*) – time in unit of days
- **flux** (*[array-like]*) – flux in unit of ppt
- **Time** (*Optional [float]*) – timescale to calculate flicker value, in unit of days

**Returns** flicker value

**Return type** flicker ([float])

`FLICKER.Flicker (time, flux, Time=8, Kp=0)`

Calculate Flicker value for a lightcurve.

Flicker() will return a single flicker value. Input can either be a 1d array/list or a list of multiple lists for the times and fluxes from different observing quarters. Flicker() will return the median flicker value from all the quarters.

**Parameters**

- **time** ([array-like]) – time in unit of days
- **flux** ([array-like]) – flux in unit of ppt
- **Time** (Optional [float]) – timescale to calculate flicker value, in units of hours
- **Kp** (Optional [float]) – Kepler magnitude for correction (optional)

**Returns** flicker value

**Return type** flicker ([float])



## CHAPTER 2

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### Tutorials

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#### 2.1 Tutorial



## CHAPTER 3

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### License & attribution

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