# Additional Pulsar Timing Tools



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# Pulsar Timing Software

**TEMPO** - FORTRAN based timing software developed over decades by many different people, poorly documented

**TEMPO2** - C++ based timing software developed based on TEMPO, but with improvements, better documention (<u>http://www.jb.man.ac.uk/pulsar/Resources/</u> <u>tempo2\_manual.pdf</u>)

**PINT** - Python based timing software that is meant to be independent from TEMPO/TEMPO2. Uses other packages such as NumPy and Astropy to do many underlying calculations (<u>https://github.com/nanograv/PINT</u>).

#### Interfaces to Pulsar Timing Software

**tempo\_utils** - python module to interface with tempo (<u>https://github.com/demorest/tempo\_utils</u>), there is also a tempo2 piece with limited functionality

**libstempo** - python module to interface with tempo2 (<u>https://github.com/vallis/libstempo</u>)

These are very useful for situations where you want run tempo/tempo2 repeatedly, or want to play around with their output in python.

## Exercises

### git clone https://github.com/ipta/ipta-2018-workshop.git Or git pull

Within the ipta-2018-workshop directory if you still have it.

#### tempo\_utils/Example\_tempo\_utils\_usage.ipynb

libstempo/libstempo-demo.ipynb

PINT/examples/PINT\_walkthrough.ipynb