

# Data Processing School :: Exercise 52

<b>Source directory</b>	/data/lofarschool/data/exercise 52
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## Context

This script demonstrates another way to use PyDAL. In this case, it reads the data into Python and plots the uv coverage of a Measurement Set.

## Prerequisite

A little knowledge of shell and python programming (or at least a curiosity to learn).

## Description

This exercise shows how to interact with uv data with the PyDAL. The plot will show a point for each integration in the observation in units of wavelengths.

## Files & Directories

Here is a list of the files for this exercise:

1. L2007\_01810\_SB18-20\_0B20.MS - Measurement set for an LBA observation
2. run\_script.sh - bash script to run "uv\_coverage.py"
3. uv-coverage\_plot.png - Example output of exercise
4. uv\_coverage.py - Python script to plot uv coverage

## Step-by-step instructions

1) Run "run\_script.sh" and answer the following questions:

- a) The plot appears as many lines. Each line is actually a set of points; one point for each integration and each baseline. Use the length of the line to estimate the length of the observation in hours.
  - b) What is the length of the longest baseline in wavelengths? What is the size of the synthesized beam for this observation?
  - c) Use your knowledge of the physical size of CS1 to estimate the wavelength of this observation.
- 2) Look at "uv\_coverage.py" and find where it selects the data to plot. Now modify the script to plot the u and w coordinates for this observation.

## Example outputs

See “uv-coverage\_plot.png”.

## Outstanding problems

None known.

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