

W8: Introduction to Python and PyGPlates: geospatial

And temporal analysis

Coordinators	Ben Mather Dietmar Müller
Date	Sun, Sep 01
Time	08:45 – 16:45
Location	Crown Perth

Summary Python has become a popular language for scientific computing, boasting a rich set of libraries used and developed by geoscientists working with data. This workshop bridges plate reconstructions in PyGPlates with the types of data analyses, modelling, and visualisation tools available in Python.

Schedule*

Session 1

Welcome and short introduction

- Jupyter notebooks
- Python programming philosophy and best practises
- Essential modules numpy and scipy

Session 2

- Data frames and data wrangling using Pandas
- Visualisation in Python using matplotlib
- Machine learning strategies from the scikit-learn library

Session 3

- Introduction to PyGPlates
- Plate reconstructions and creating animations
- Extracting velocity, rotation data

Session 4

- Importing and exporting data for geospatial analysis
- Case study: using machine learning to find Porphyry Copper deposits in the Andes
- ☑ Summary and where to find additional resources