

---

# PYACS: A set of Python tools for GPS analysis and tectonic modelling

Jean-Mathieu Nocquet\*<sup>1,2</sup>

<sup>1</sup>Géoazur (GEOAZUR) – Observatoire de la Cote d’Azur, IRD, CNRS : UMR7329, Université de Nice Sophia-Antipolis, Université Pierre et Marie Curie - Paris VI, INSU – 250 av. A. Einstein, 06560 Valbonne, France

<sup>2</sup>Institut de Physique du Globe de Paris – IPG PARIS – IPGP - 1, rue Jussieu - 75238 Paris cedex 05, France

## Abstract

I present a set of tools developed in Python that might help geodesists and tectonic modelers in their study. PYACS first includes a module to implement reference frame and derive time series for free or loosely constrained solution. This module implements the latest model from the ITRF2014 and uses robust estimators to propose an optimal selection of sites to define the frame. PYACS then includes a tool box of time series analysis, including primitive functions like windowing, reference frame change, outlier and offset detection that can be easily assembled to produce automated analysis. Finally, PYACS includes several tools for modeling geodetic results. Aside classical Euler pole and strain rate approaches, PYACS also provides finite-fault inversion tools using the approach described in Nocquet (2018) and time-dependent inversion of slip.

---

\*Speaker