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## Reconstructing 10 years of spatio-temporal aseismic slip history along the San Andreas Fault

**Sylvain Michel**, Romain Jolivet, Adriano Gualandi, Blandine Guardonio, Olivier Lengliné, Manon Dalaison, and Angélique Benoit

Ecole Normale Supérieure, Laboratoire de Géologie, PARIS, France ([sylvain\\_michel@live.fr](mailto:sylvain_michel@live.fr))

The San Andreas Fault creeping section is generally considered as slipping continuously and aseismically, at a rate of about 35 mm/yr. However, recent studies, using either Global Positioning System (GPS) network or Interferometric Synthetic Aperture Radar (InSAR) data, have highlighted spatial and temporal variations of slip rate. Here, we combine GPS, InSAR, creepmeter and seismicity data over the 2008-2018 period, taking advantage of their complementary spatial and temporal resolutions, to detail a comprehensive picture of episodic acceleration and deceleration slip patterns. For this purpose, we use a variational Bayesian Independent Component Analysis (vblICA) decomposition to separate geodetic deformation due to non-tectonic sources from signals of tectonic origin. The fault slip kinematics is reconstructed by linear inversion of each Independent Component related to transient tectonic activity. We document aseismic slip acceleration transients and discuss their origin.