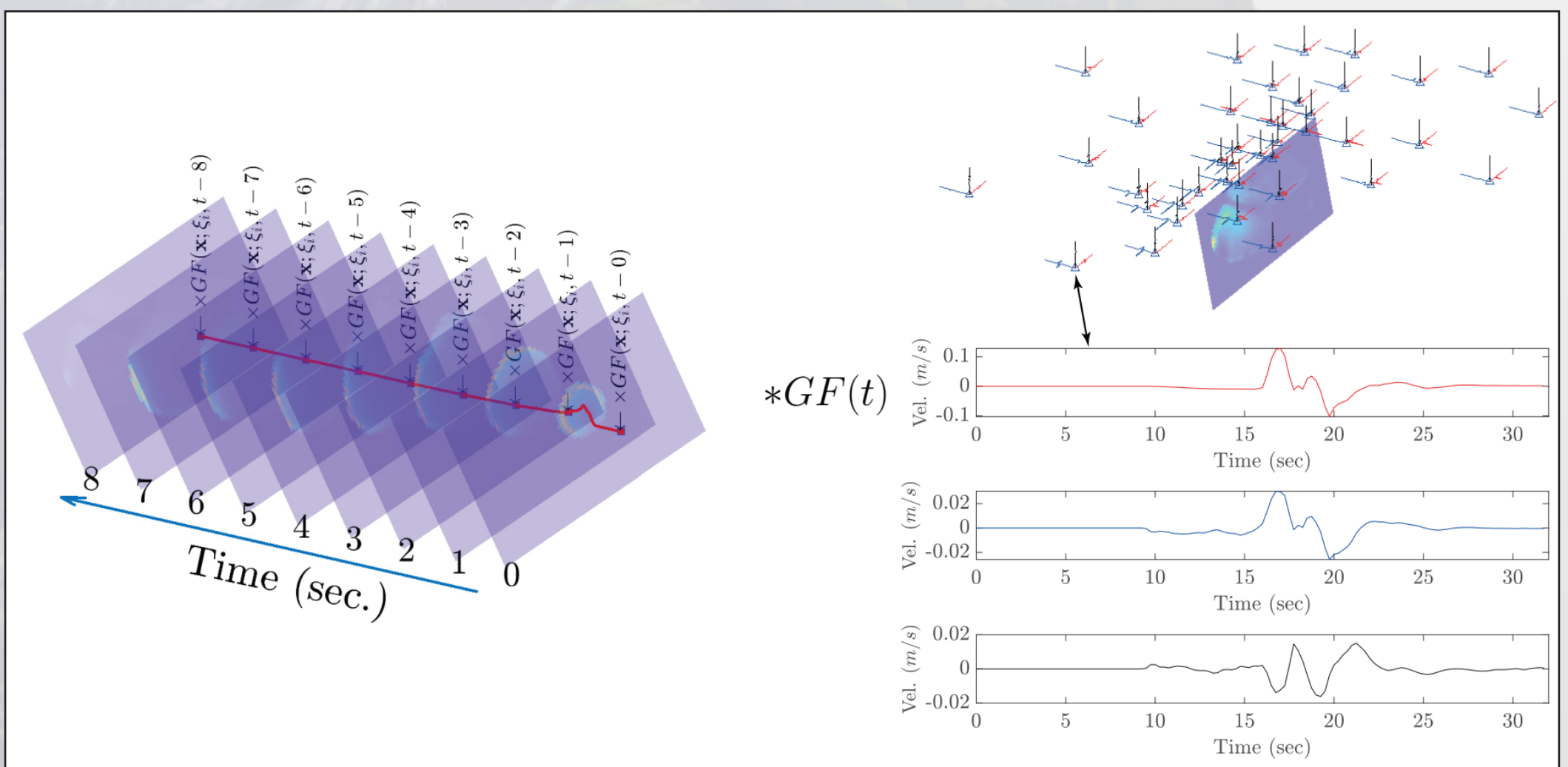# SOLID EARTH SEMINARS

FAULT RUPTURE IMAGING USING FUZZY NEURAL NETWORKS

WHAT'S THIS ABOUT?

Seismologists use fault rupture imaging techniques to infer the complexities of earthquakes, such as nucleation, growth, and arrest of an earthquake. The input to such methods is the ground motion data, recorded by seismometers, and the output is the slip history at representative points on the fault plane. The solution to this problem is substantially unstable, because the slip model is sensitive to the small levels of noise in the recorded data. This problem arises from an ill-posedness in the mathematical relationship between data and model. In this seminar, we present a novel method to obtain such images using neural networks, which improves the ill-posedness of the rupture imaging problem. The method is called the neuro-fuzzy inversion method. We show that we can successfully recover the spatio-temporal evolution of ruptures for several well-recorded recent earthquakes, including the 2016 M6.2 Amatrice and 2019 M6.4, M7.2 Ridgecrest events.

ZOOM

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June 30
Wednesday: 13:00

PASS: 2021_RG234
https://videoconf-colibri.zoom.us/j/89018419156