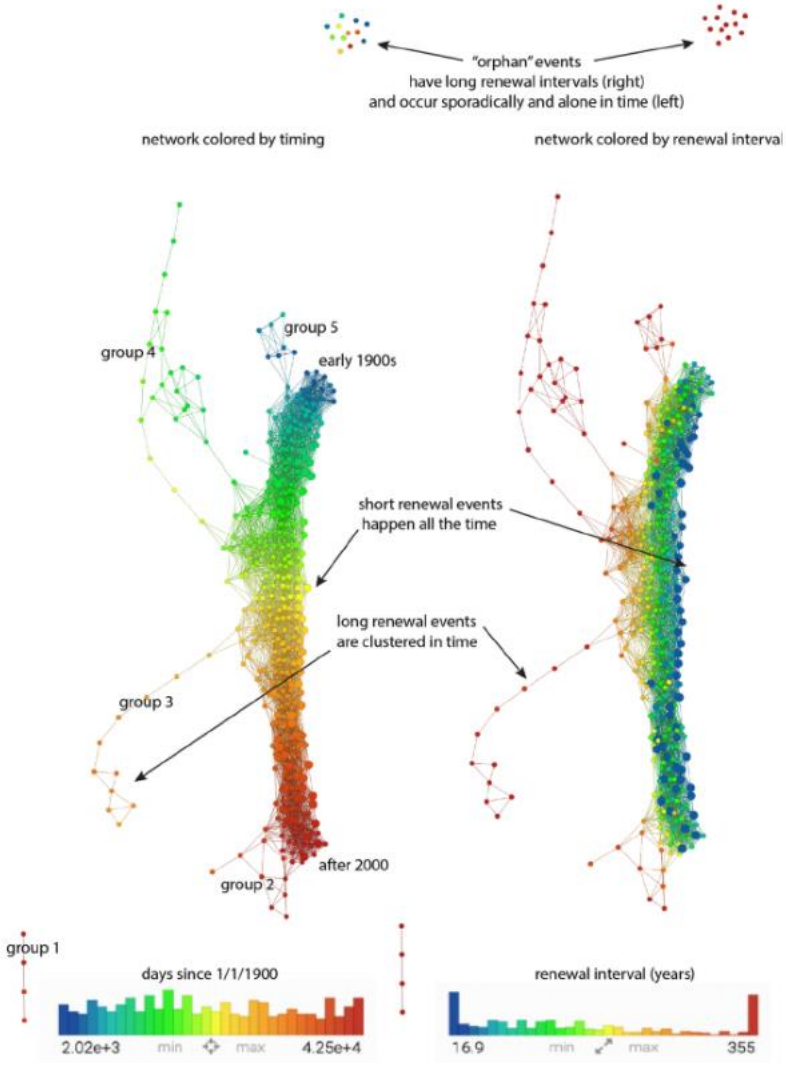
IGPP Virtual Seminar Series

Rebecca Bendick
UNAVCO

Evidence for the synchronization in the global earthquake catalog

Date: Tuesday, November 10, 2020
Time: 12:00 pm, Pacific Time
Host: El Knappe (eknappe@ucsd.edu – if you have questions)
Zoom link (password = elastic): click here to join meeting
Meeting ID: 923 4958 9900
Because this meeting will be recorded, please make sure that you are comfortable with it before registering

Phase alignment (synchronization) is a generalized property of interacting oscillators. If such interactions apply to earthquakes, they should manifest as time-dependent variations in earthquake productivity organized according to a characteristic elastic loading period. Defining this period as renewal interval, the time required to accumulate the elastic potential energy released in a rupture, gives a consistent scaling property that can be used to search for temporal organization. We test for the expected structure in earthquake productivity using different statistical tools optimized for different sensitivities. These tests show structure in the arrangement of earthquakes in time that could be used to improve forecasting skill and advance our understanding of global earthquake interactions.



Topology based on event timing and characteristic renewal metrics, showing strong temporal clustering of earthquakes according to their loading properties.