This document will contain summary of selected papers I read.

[*Yokota et al.*, 2016] reported the seafloor geodetic observation network data and an offshore interpolate slip-deficit rates (SDRs) distribution model. They use the seafloor geodetic data to invert the SDRs in Japan, and get a model that is robustly similar to that obtained in the past studies using only the onshore data. A couple of interesting things:

* Subducting ridge not only activates shallow VLFEs, but also forms the low-SDR region (low-coupling condition)
* These low-SDR region usually is the boundary of the rupture, if the earthquake rupture stops at these boundaries, it maybe a small earthquake, but if it ruptures through, it maybe a large earthquake.

[*Hardebeck and Shelly*, 2016] using templates matching and double-difference to identify and locate the aftershocks for the 2014 Napa Earthquake. They find many aftershocks occur in a complex zone of secondary faulting. They also generate the focal mechanism and most of them show strike-slip and oblique-reverse faulting on secondary dipping faults in the main aftershock zone. These secondary faults were brought closer to failure by Coulomb stress changes from the main-shock. One conclusion is: the lack of stick-slip patches in the southern rupture zone may contribute to the low productivity of the South Napa aftershock sequence.

A new paper in Science in the week of Jun 6th 2016 [*Jiang and Lapusta*, 2016] reports the evidence to answer the question why many major strike-slip fauts known to have had large earthquakes are silent in the interseismic period. They suggest the absence of the microseismcity at the bottom of the seismogenic zone indicates deep rupture past the seismogenic zone in previous large earthquakes. The conclusions come from numerical simulations of fault behavior and observations of recent major events from San Andreas Fault and other major faults around the world.

Hardebeck, J. L., and D. R. Shelly (2016), Aftershocks of the 2014 South Napa, California, Earthquake: Complex Faulting on Secondary Faults, *Bull. Seismol. Soc. Am.*, *106*(3), 1100–1109, doi:10.1785/0120150169.

Jiang, J., and N. Lapusta (2016), Deeper penetration of large earthquakes on seismically quiescent faults, *Science (80-. ).*, *352*(6291), 1293–1297, doi:10.1126/science.aaf1496.

Yokota, Y., T. Ishikawa, S. Watanabe, T. Tashiro, and A. Asada (2016), Seafloor geodetic constraints on interplate coupling of the Nankai Trough megathrust zone, *Nature*, 4–6, doi:10.1038/nature17632.