temblor® Product Sheet as of 25 February 2021

1. **GEAR** (Global Earthquake Activity Rate) model as gridded (0.1 x 0.1°) annual quake rates for any magnitude or range ($7.0<M\leq7.5$). M 6.0-9.0 quake rates given in 0.1M increments. After publication (Bird et al., *BSSA* 2015), independently blind tested for 2 years by the top-rated International Collaboratory for the Study of Earthquake Predictability (Strader et al., *SRL* 2018), where it outperformed its competitors.

2. **EVENTSET,** a 50,000-year M 6.0-9.0 stochastic event set of six million earthquakes, based on GEAR. Does not use 'characteristic earthquakes' or 'area sources.' EVENTSET closely resembles the independent USGS ANSS catalog for $M\geq6$ for the past 50 years.

3. **PUSH** (Probabilistic Uniform Seismic Hazard) files in PGA and 1 Hz and 5 Hz Spectral Acceleration, site corrected at 950 x 850 m resolution. The files are continuous and globally consistent, without any mosaicking. PUSH is based on GEAR and trained on the USGS (NSHMP) hazard for the western U.S. and Alaska. Provided as a GeoTiff file, which can be fully numerically sampled. PUSH is also available as full hazard curves (shaking for any return period) via API per individual lookup for any coordinate.

4. **Cat-in-the-Box** API that operates on EVENTSET, with the full output magnitude distribution, for any box and any magnitude range.

5. **Realtime Risk** as high-resolution gridded files in regions of interest for annual periods: Background quake rate, Forecast quake rate, and Rate change (forecast/background). Used to assess event rates in a vendor model, to modify vendor model event rates, or to replace vendor rates with next year's rates. Can be run for shorter post-quake periods to evaluate sales moratoria.

6. **Quarterly-updated EVENTSET**, 50,000 realizations of next year's quakes, in which the stochastic event set is modified for effects from recent shocks in, for example, Chile, Japan, California, New Zealand, Turkey, and Mexico. Other areas can be included.

7. **STAMP**, SiTe AMPlification worldwide or for any lat/lon, at 200 x 200 m resolution (at least 10 times any other source). Independently tested by Fermat Capital Management for Japan, and found to outperform USGS site model. Available as raster file; will soon be available via API. Base model available worldwide; enhanced version available in U.S., Mexico, Japan, Taiwan, with more regions coming.

8. **TemblorCat** *(under development)*, API delivers shaking exceedance for any coordinates. Uses EVENTSET, Temblor Ground Motion Model, and STAMP. Can enter large portfolios in the AIR CEDE format. We currently provide losses for U.S. residential and commercial buildings, and will soon extend with worldwide building fragilities. Inter-operable with FMKat by KatRisk, which outputs standard EP curves, year loss tables, summary statistics, and computes ground up, gross, net, reinsurance losses at site, policy, account, and portfolio level for all insurance contracts.

9. **Engineering Demand Spectra.** Site-corrected spectra (PGA, 1 Hz and 5 Hz SA) for any coordinates worldwide. Maps of vs30, 2% and 10% in 50 year shaking exceedance, active faults and USGS, EMSC or Temblor merged catalog earthquakes.

10. **Temblor seismic risk mobile app** and **Temblor Earthquake News.** About 100,000 worldwide unique pageviews a month, and articles published every few days. Greatly enhanced App 4.0 launches in March 2021, with exceptional U.S. and Taiwan data.