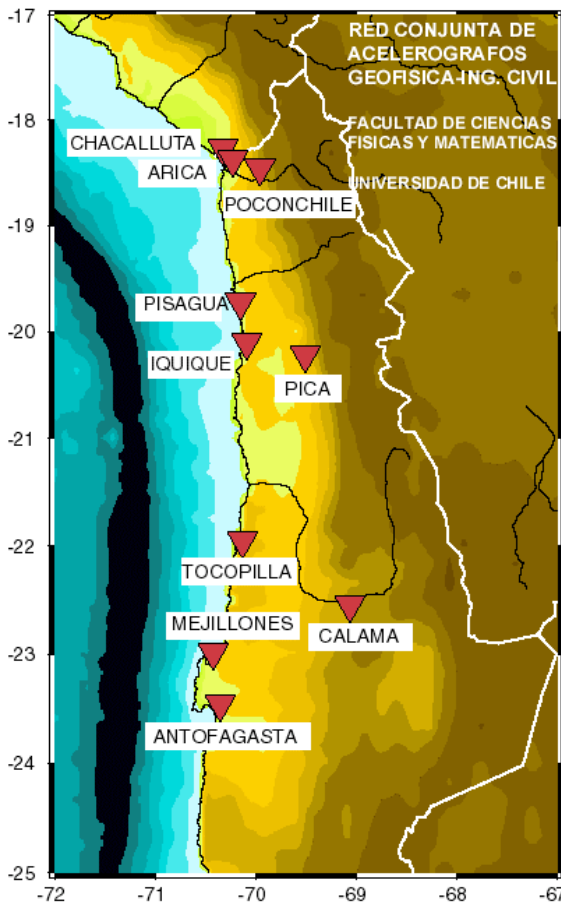


INTRODUCTION

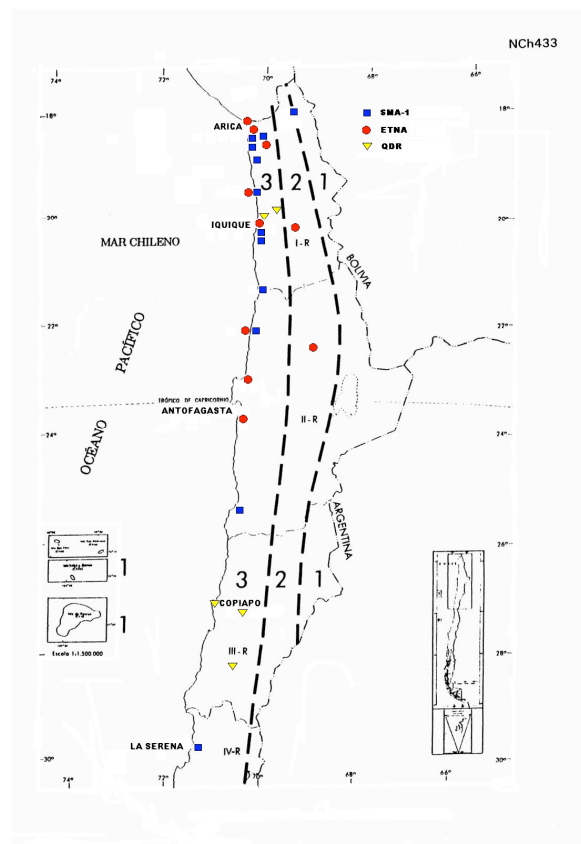
On Wednesday, November 14, 2007 at 15:40:53 UTC, a $M_w=7.7$ earthquake hit the north of Chile. According to the USGS website, the epicenter was located at 22.189°S , 69.843°W , and its depth was 60 km. According to the Universidad de Chile's Seismology Service this was an intraplate event.

RECORDINGS

As Figure 1(a) and 1(b) show, there are at least six recording stations close to the epicenter (i.e., close to the city of Tocopilla). Figure 2 shows the relative location of one of these stations (Mejillones Station) with respect to the location of the earthquake. Figure 3 shows the recorded accelerations at the Mejillones station ($\text{PGA}=0.42\text{g}$), which is located approximately 120 km to the southwest of the epicenter. Considering that the event was located at a depth of 60 km, the estimated distance to the hypocenter is about 135 km.



(a)



(b)

Figure 1. Location of accelerometers (Source: National Network of Accelerographs, Department of Civil Engineering, Universidad de Chile, <http://www.renadic.cl/#libre>)

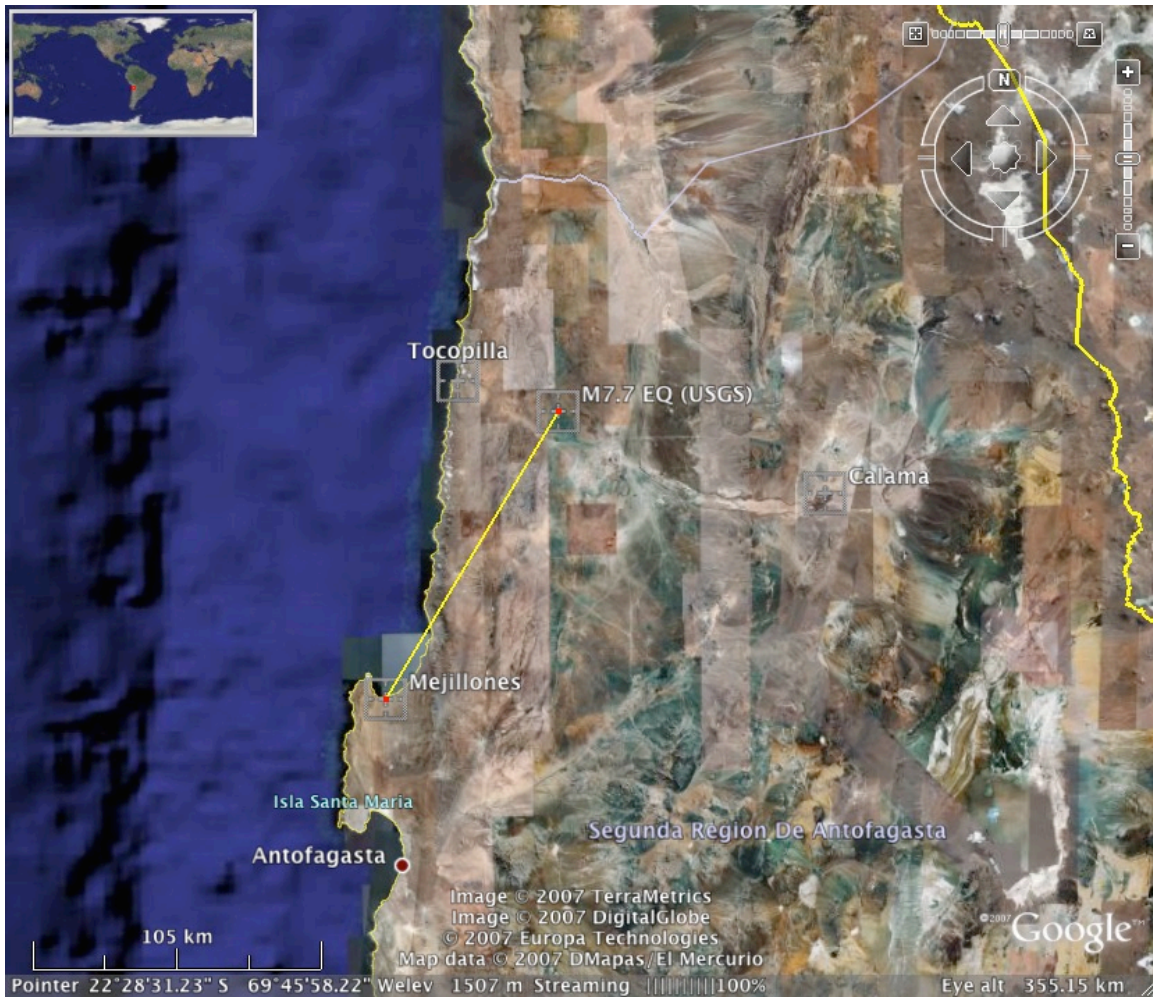


Figure 2. Location of the Mejillones Station relative to the epicenter of the earthquake

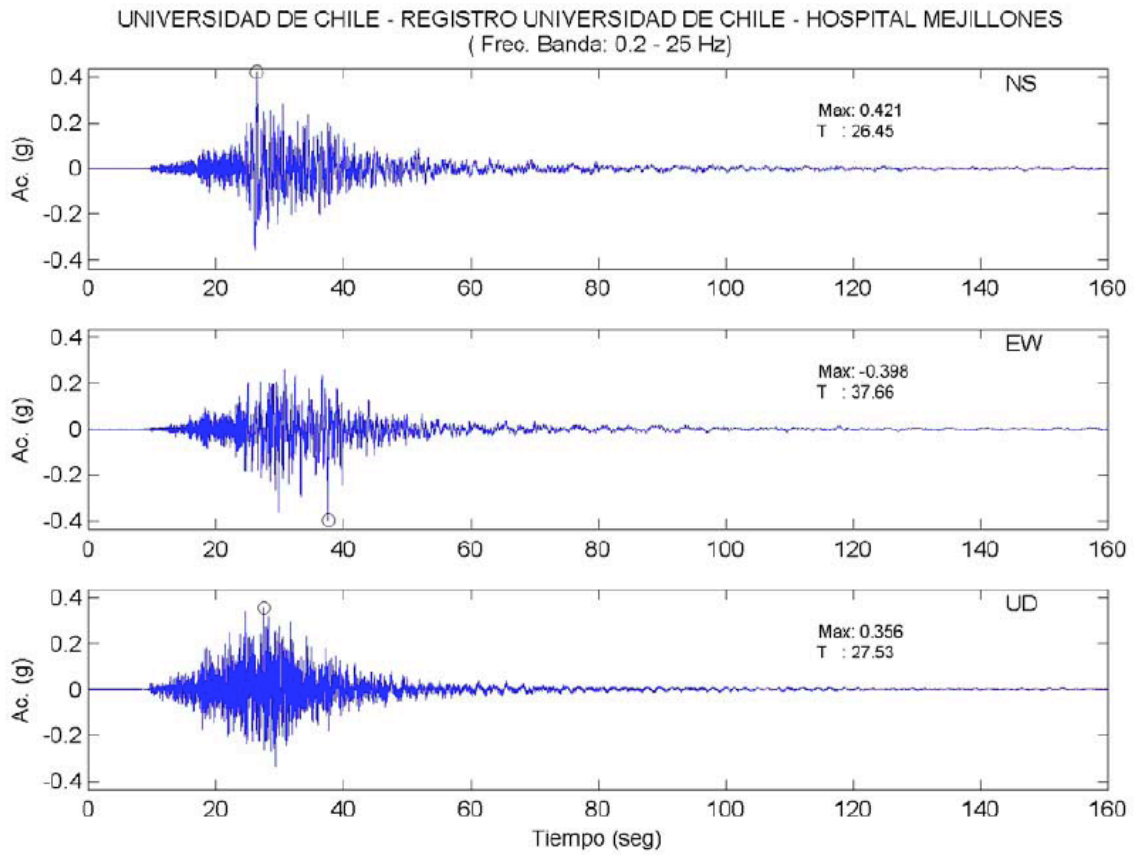


Figure 3. Recorded accelerations at the Mejillones Hospital Station (PGA=0.42g, Source: “M7.7 Earthquake in the north of Chile, November 14, 2007, Preliminary Report #1,” Boroschek et al., 2007).

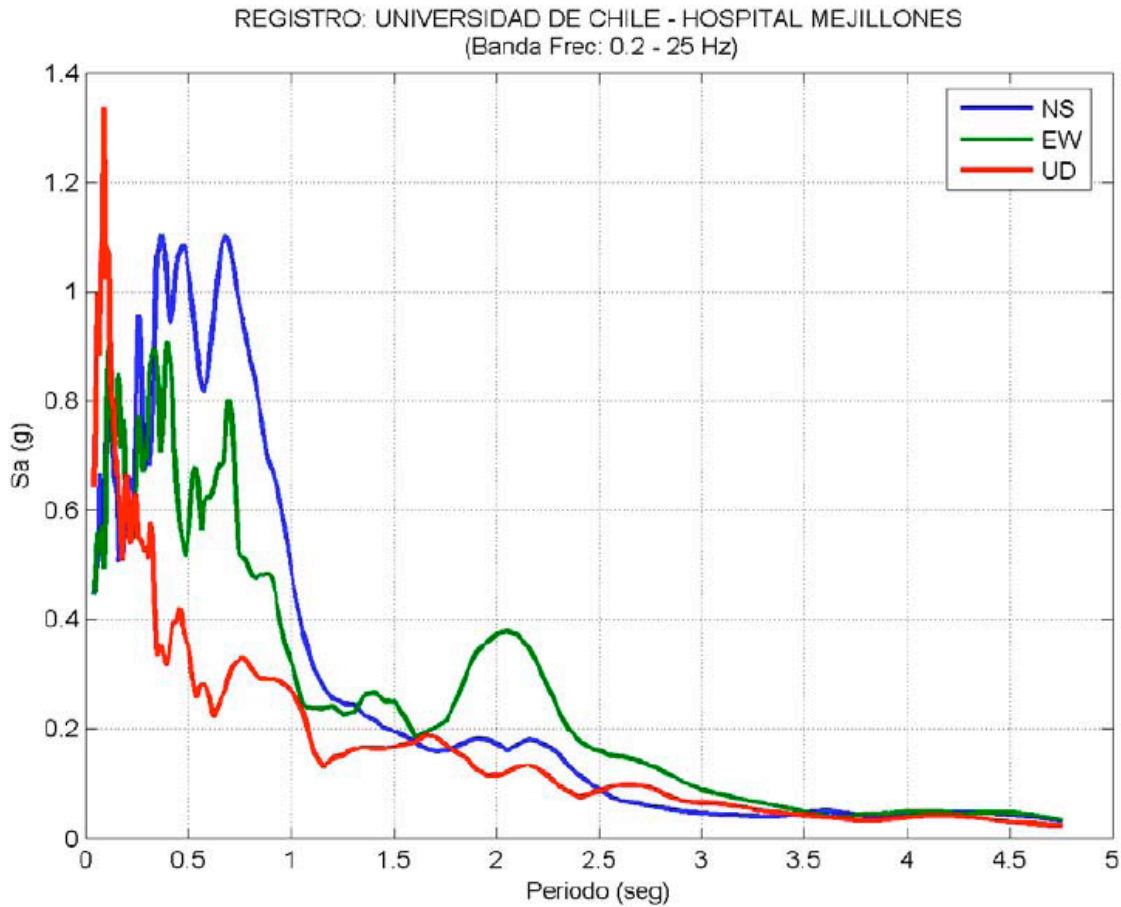


Figure 4. Acceleration response spectra (5% damping) at the Mejillones Hospital Station (Source: “M7.7 Earthquake in the north of Chile, November 14, 2007, Preliminary Report #1,” Boroschek et al., 2007).

OBSERVED DAMAGE

At the time of this report there have been no reports of major damage to engineered systems. Major mining projects (such as Chuquicamata and Radomiro Tomic) located close to the earthquake epicenter, reported no major damage. So far, 2 people have died due to the collapse of walls, and about 45 people have been reported injured. Figures 5 through 8 show some of the effects of this earthquake.



Figure 5. Roof collapse in the city of Antofagasta (Source: www.emol.com)



Figure 6. Landslide in the city of Iquique (Source: www.emol.com)



Figure 7. Wall collapse (Source: www.emol.com)



Figure 8. Structural damage in a building (Source: www.emol.com)