The Hokkaido Earthquake: photos and analysis (photos by Jiji News Service)

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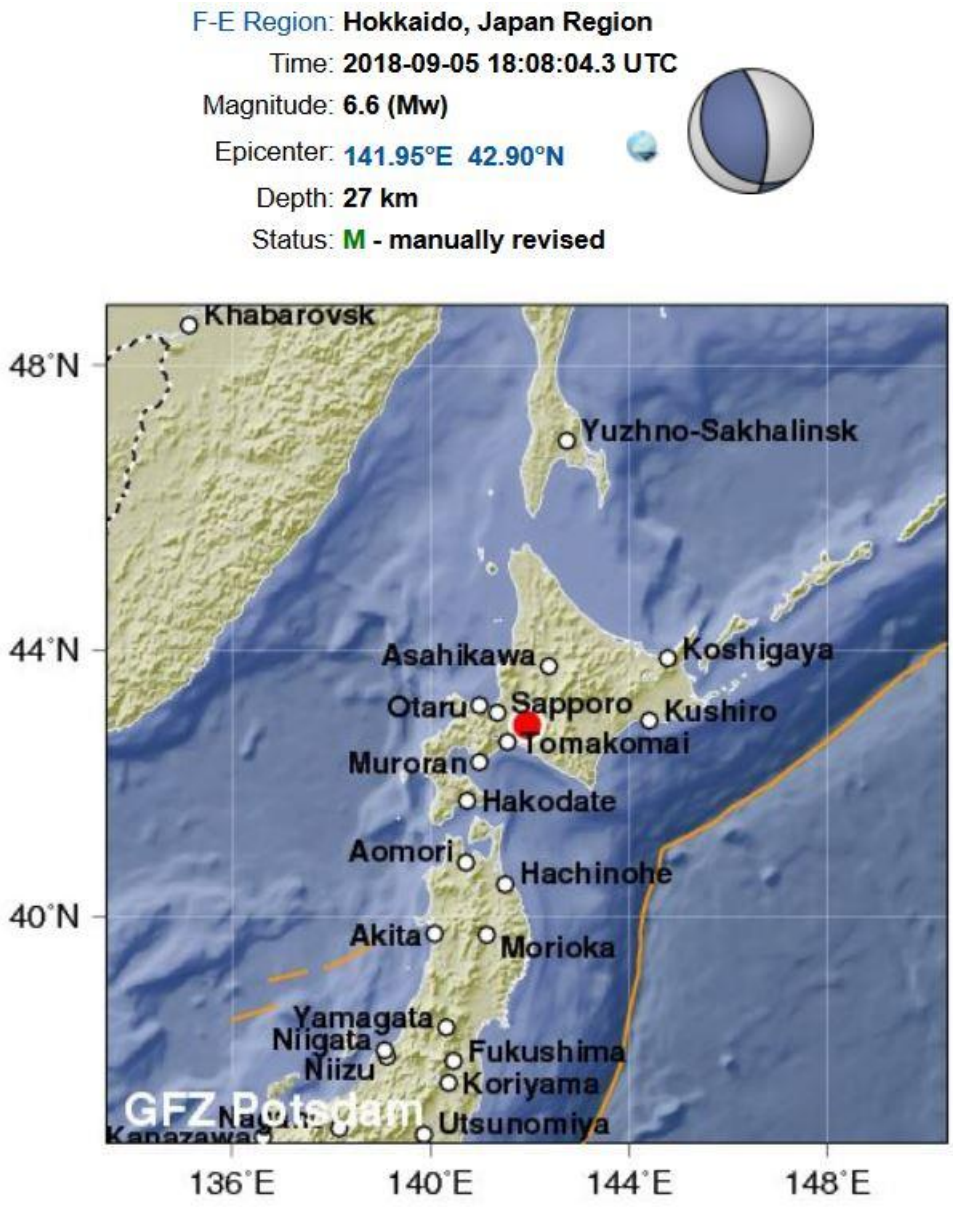
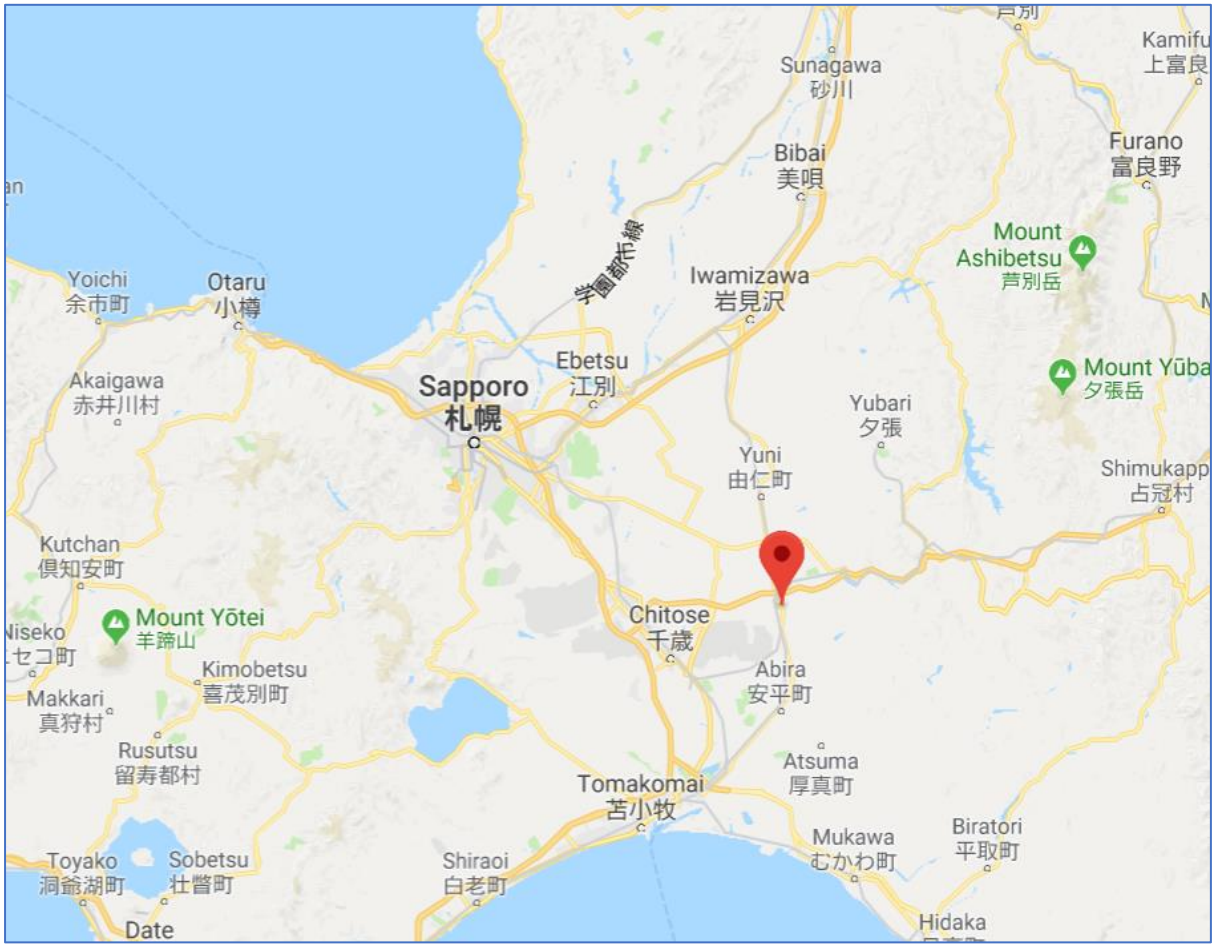
Where it happened



Area of Hokkaido with the strongest motion



The city of Oiwake, where the highest ground motion was recorded.

Photo 1 In Sapporo

Photo 2 In Sapporo

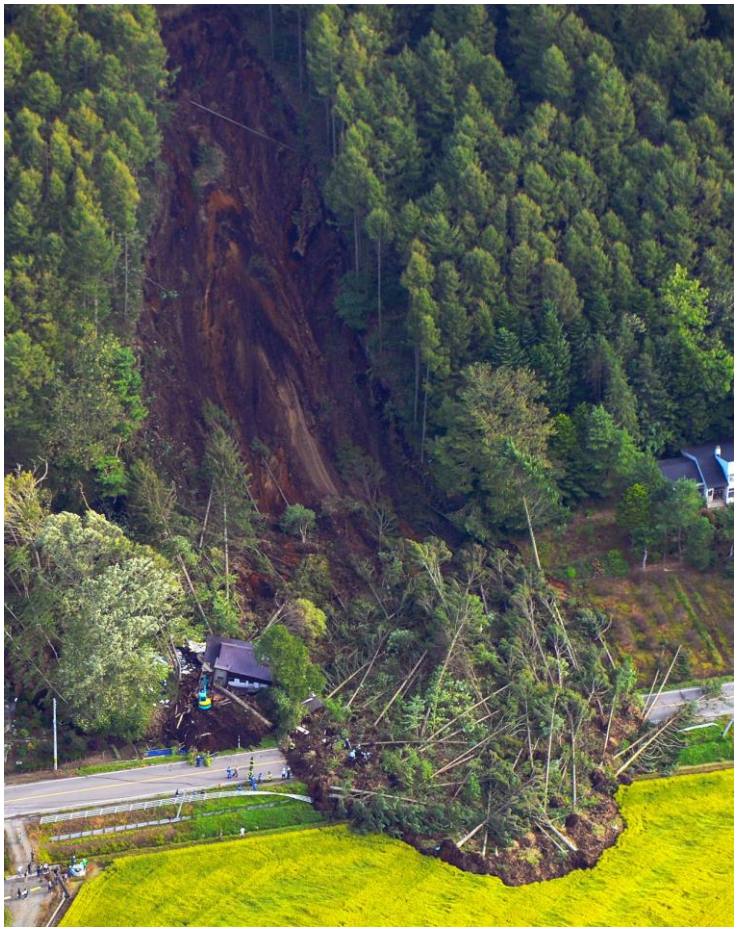


Photo 3 In Atsuma

Photo 4 In Atsuma

Photo 5 In Abira

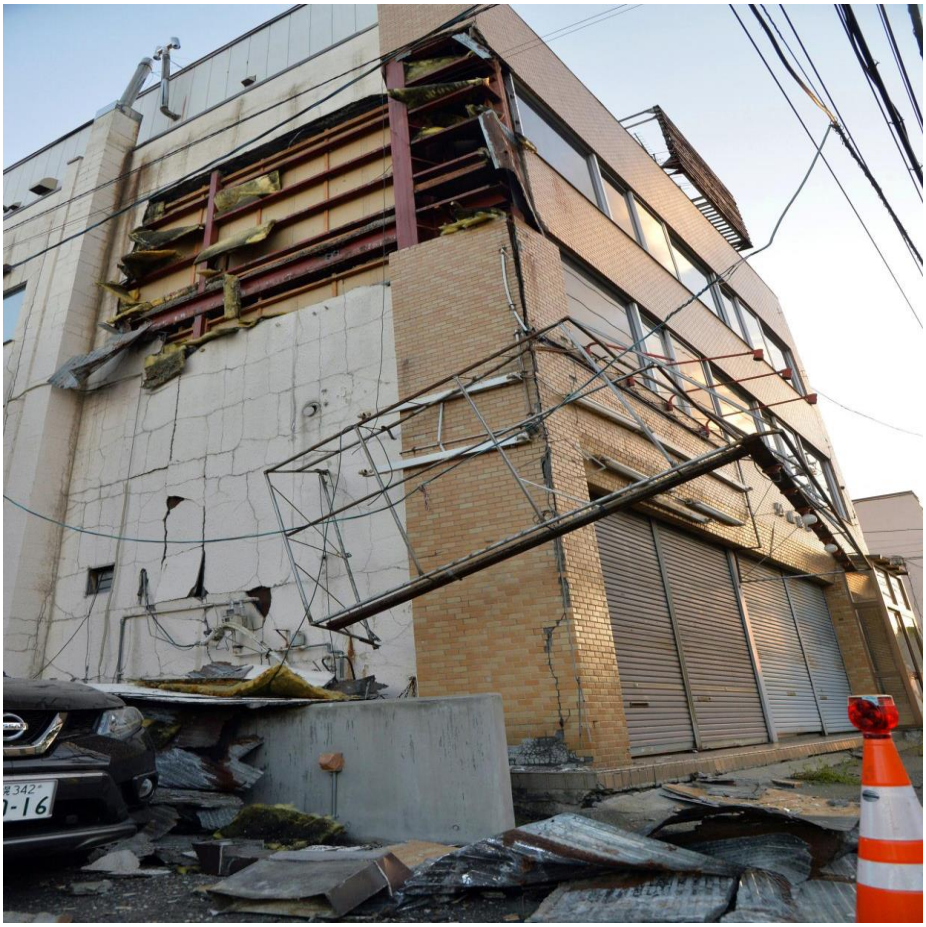


Photo 6 In Sapporo

Photo 7 In Sapporo

Photo 8 Landslides in Atsuma

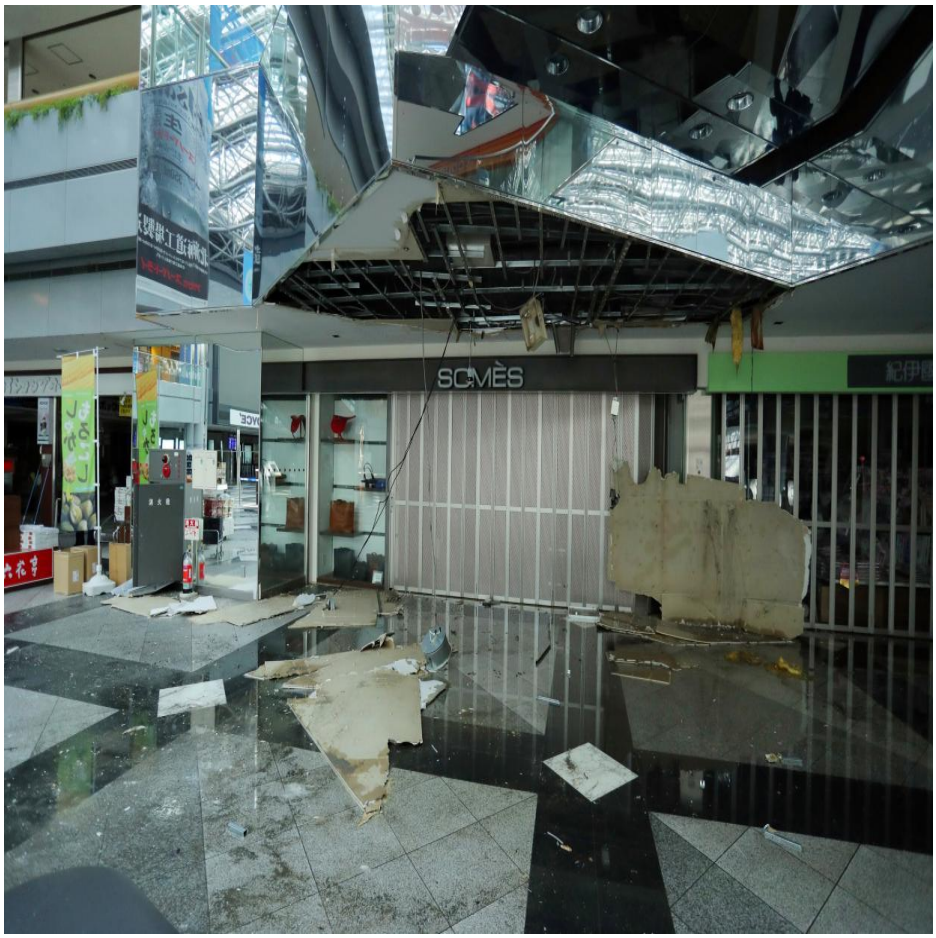


Photo 9 Damage at New Chitose Airport

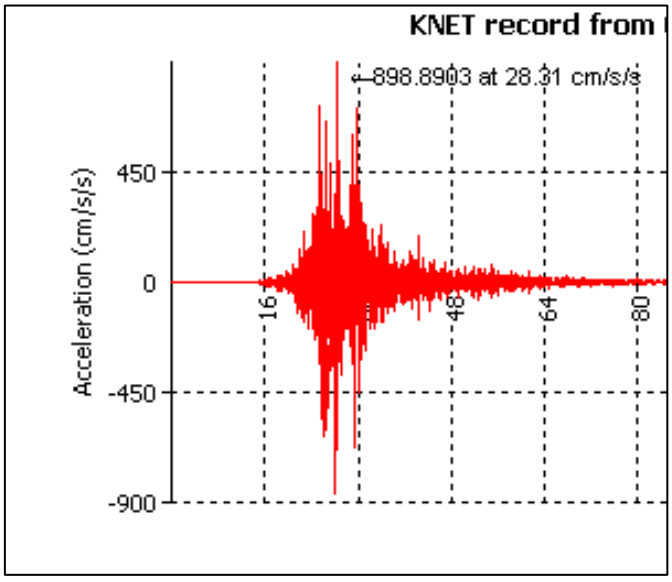
Photo 10 In Sapporo

Photo 11 In Sapporo

Notes

- Of course, photos from the media cannot give us the true picture of damage from the earthquake engineering viewpoint.

- However, from preliminary reports, the main damage was caused by land subsidence, liquefaction, landslides, mudslides, and other geological effects.
- Resulting blackouts have hit as many as 2.95 million households.
- The Nos 1-3 of the Tomari NPP in western Hokkaido had an LOSP event, but the off-site power was restored by 13:00.
- The LOSP event occurred when the fossil fuel plants in the prefecture shut down automatically after the quake.
- Although only one fossil plant was directly affected, the others shutdown because load balancing on the grid could not be maintained.
- The blackout also affected around 40 hospitals as well as telephone services and television broadcasting in the prefecture.
- A fire broke out at a Mitsubishi Steel Mfg. Co. plant in the city of Nemuro but was later brought mostly under control.
- There was also a fire at an oil refinery facility in Muroran, but it had almost been subdued by the afternoon.
- New Chitose Airport was closed for the day after part of its terminal ceiling collapsed, as well as due to the power outage.
- Shinkansen and local train services were disrupted by the quake.
- Some geologists believe that the earthquake was likely caused by a series of slips on an inland active fault.
- An active fault zone of more than 100 km in length runs north-south about 10 kilometers west of the epicenter.
- Although the Japan Meteorological Agency says it is unclear whether the zone had something to do with the quake, the geologists believe its displacement could be the cause.
- A seismologist, who examined strong motion time histories, found that there were about three powerful shaking movements in a short period of time, which leads him to believe that consecutive fault slips may have caused a strong shaking for a long time and triggered mudslides, landslides, etc. (see below from my analysis).



- The fault zone is massive, and its structure is complicated geomorphologists in Japan believe, but there is not enough data on the southern part of the zone to tell if it has caused large-scale quakes in the past.
- Collecting data on the southern part, which is more than 54 km in length, is difficult as it extends into the sea and partly runs under the seafloor.