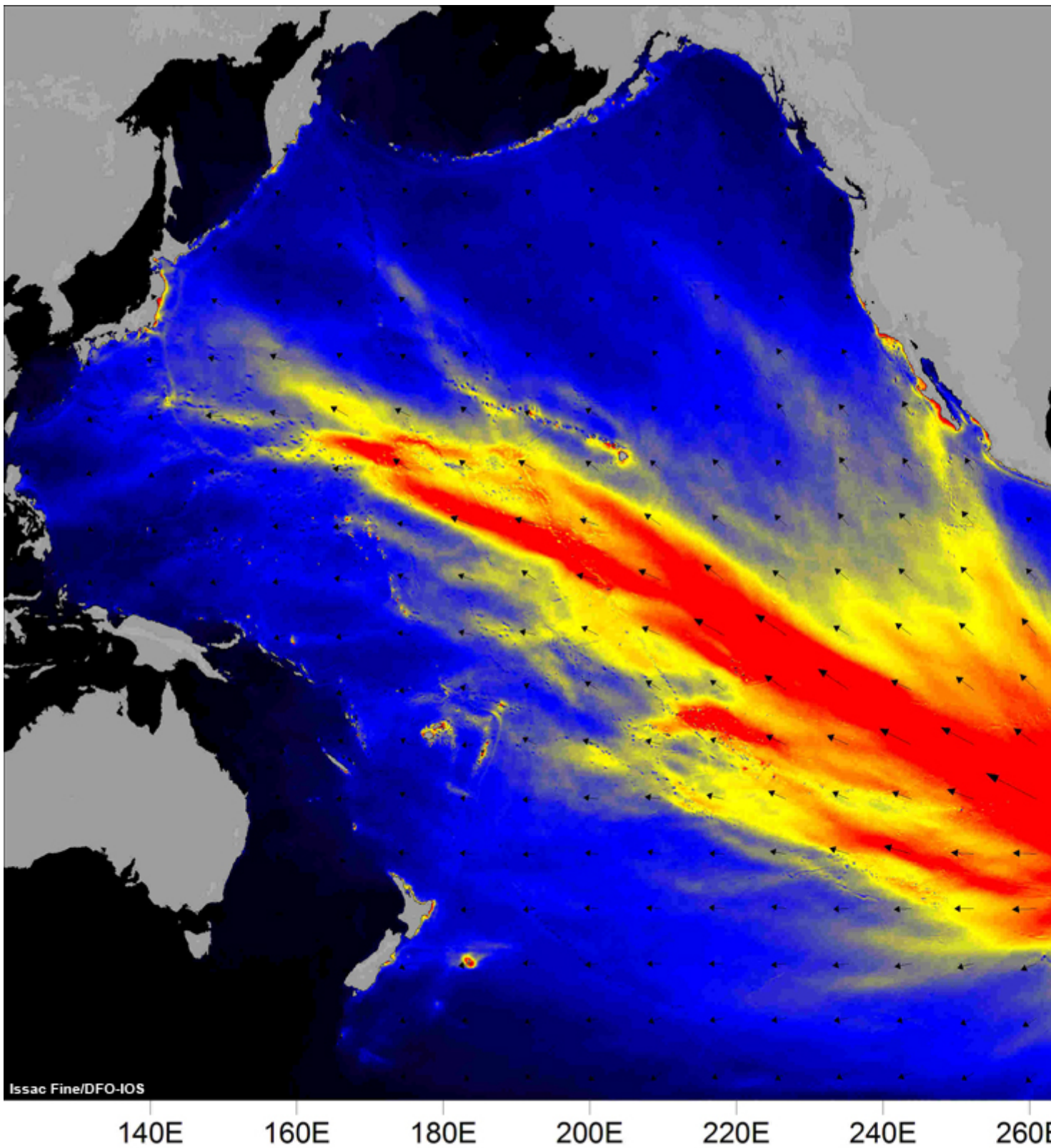


Chilean Earthquake and Tsunami ^[1]

Submitted by Rory Lattimer Thu, 2010-03-04 00:00



[2]

Major Earthquake

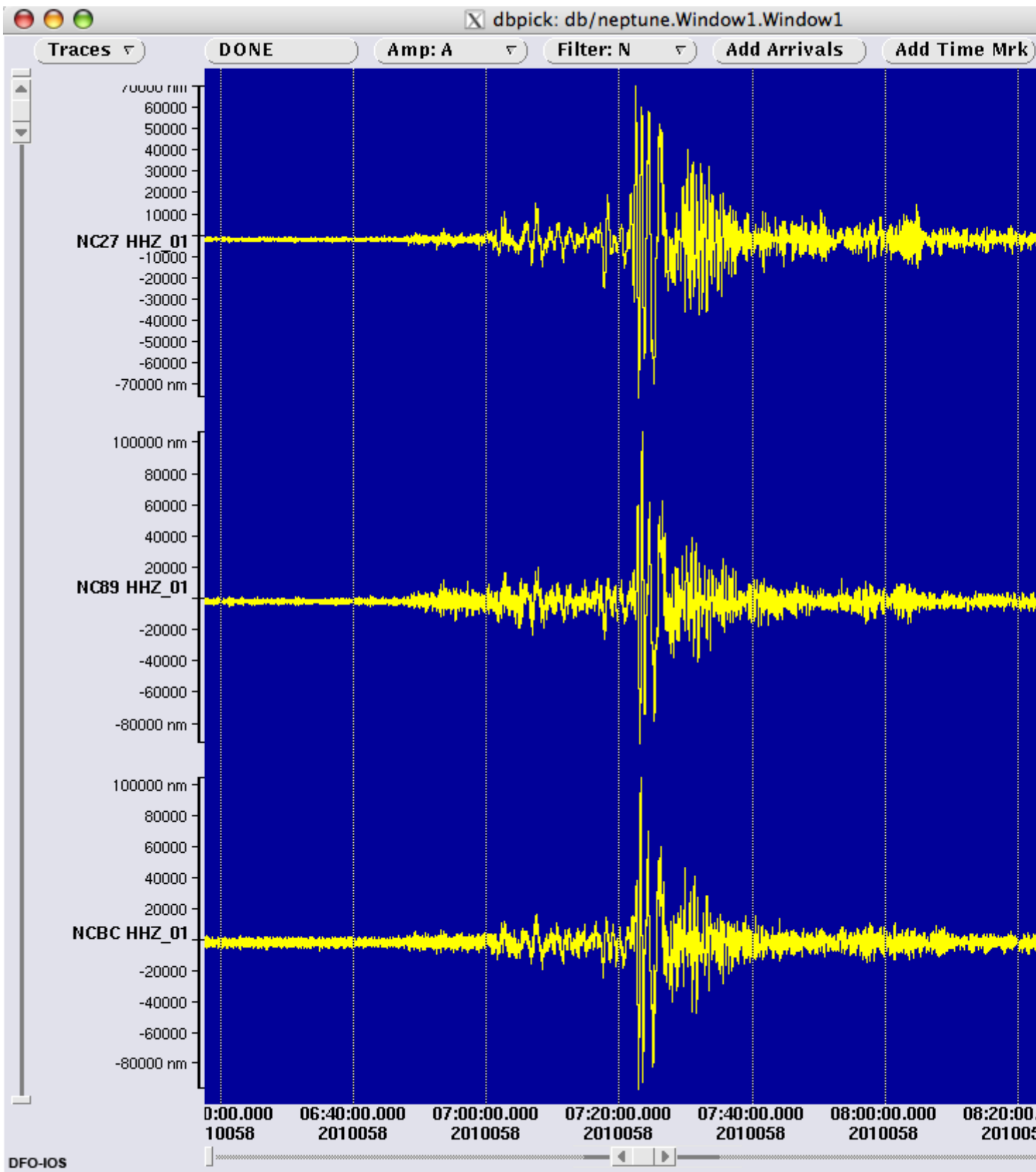
On Saturday, Feb. 27 2010, 0634UTC, a magnitude 8.8 earthquake occurred off the coast of Chile. A tsunami advisory was issued for the BC coast. According to the [USGS](#) [3], "this earthquake occurred at the boundary between the Nazca and South American tectonic plates. The two plates are converging at a rate of 70 mm per year. The earthquake occurred as thrust-

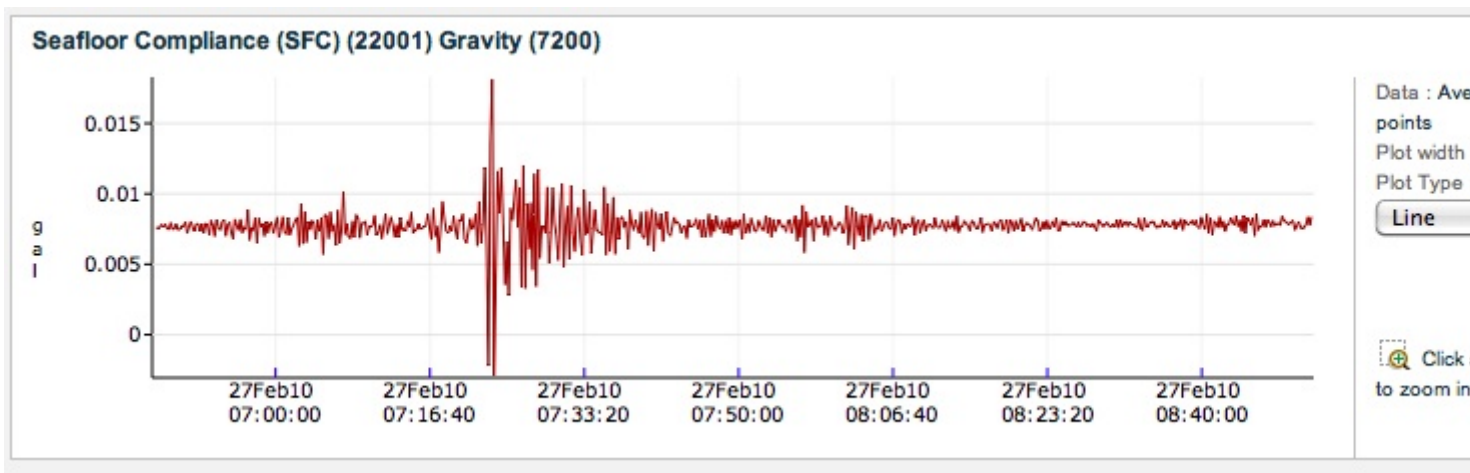
faulting on the interface between the two plates, with the Nazca plate moving down and landward below the South American plate."

With a magnitude of 8.8, this recent earthquake was the seventh strongest ever recorded ^[4], and 500 times stronger than the magnitude 7.0 earthquake that struck Haiti in January 2010. The most powerful earthquake ever recorded, (magnitude 9.5) also occurred off the coast of Chile in this region, the Valdivia earthquake ^[5] of May 1960.

Seismic Monitoring

Three Ocean Networks Canada broadband seismometers, which lie buried in seafloor sediments at our Barkley Canyon, Cascadia Basin and Clayoquot Slope locations, recorded the earthquake. The tremor accelerations were also recorded by the gravimeter in our Seafloor Compliance System at Clayoquot Slope.





[7]

Tracking the Tsunami

Within an hour of the earthquake, tsunami waves over 5m in height struck coastal Chile, leading to the deaths of hundreds of people. Tsunami waves ranging 1-5m were observed in many locations, including New Zealand, French Polynesia and Hawaii. The tsunami propagated across the Pacific at jet-like speeds and reached coastal British Columbia by 23:00UTC, 16.5 hours after the event. Tsunami wave heights of 50 to 100cm were recorded along the West Coast of Vancouver Island.

Scientists at Canada's DFO Institute of Ocean Science fed data from one of the Ocean Networks Canada bottom pressure recorders into their regional tsunami model for this event, allowing them to simulate wave motions and interactions for coastal British Columbia, including the Strait of Georgia.

Data from events like these are an invaluable aid to scientists, who are working to improve tsunami prediction models for the West Coast. In the future, improved models could greatly benefit emergency response, public safety and disaster-preparedness operations.

Tags:

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Source URL: <https://www.oceannetworks.ca/chilean-earthquake-and-tsunami>

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- [3] <http://earthquake.usgs.gov/earthquakes/>
- [4] http://en.wikipedia.org/wiki/List_of_earthquakes#Largest_earthquakes_by_magnitude
- [5] http://en.wikipedia.org/wiki/1960_Valdivia_earthquake
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