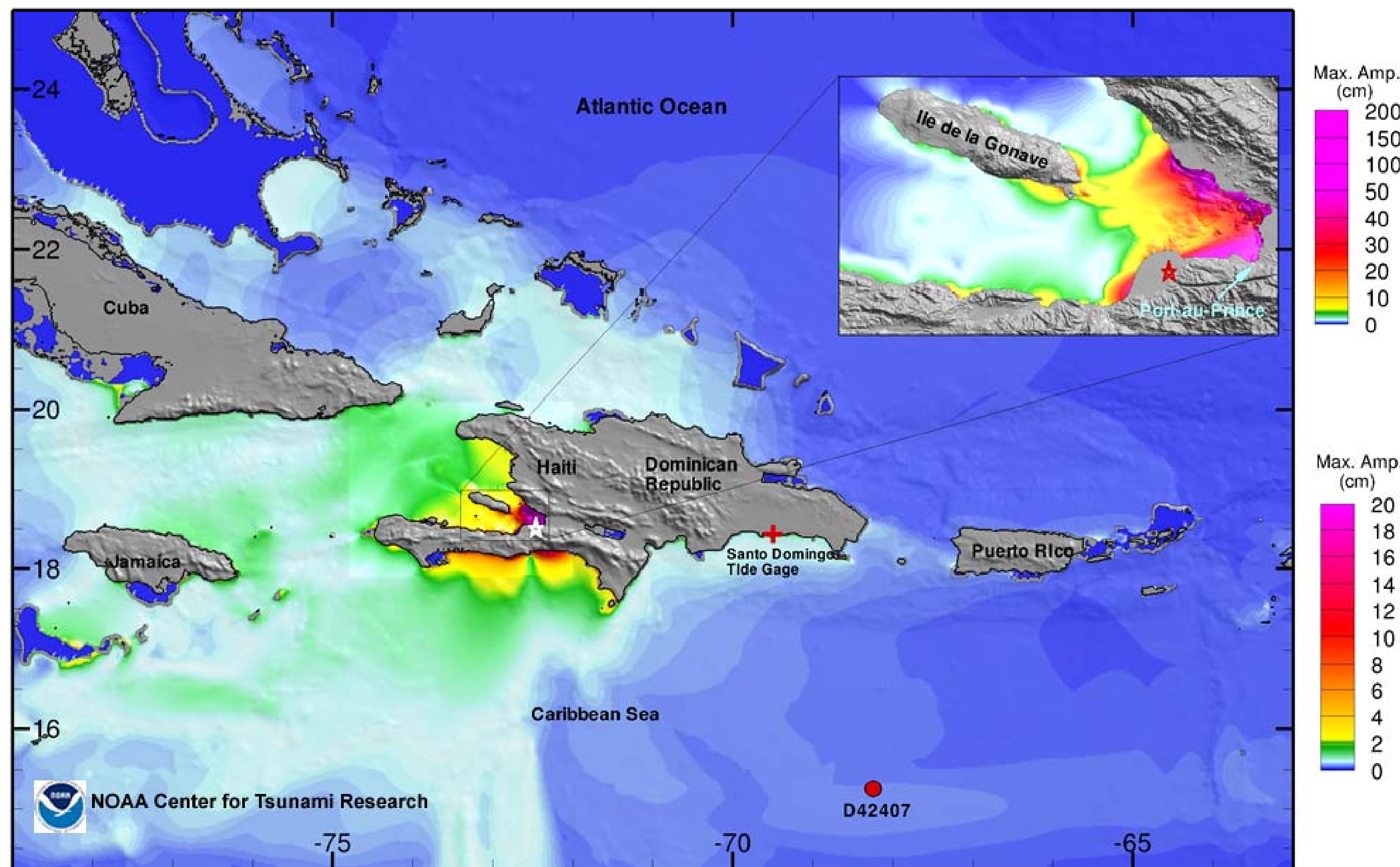


# January 12, 2010 Haiti Earthquake and Tsunami Event



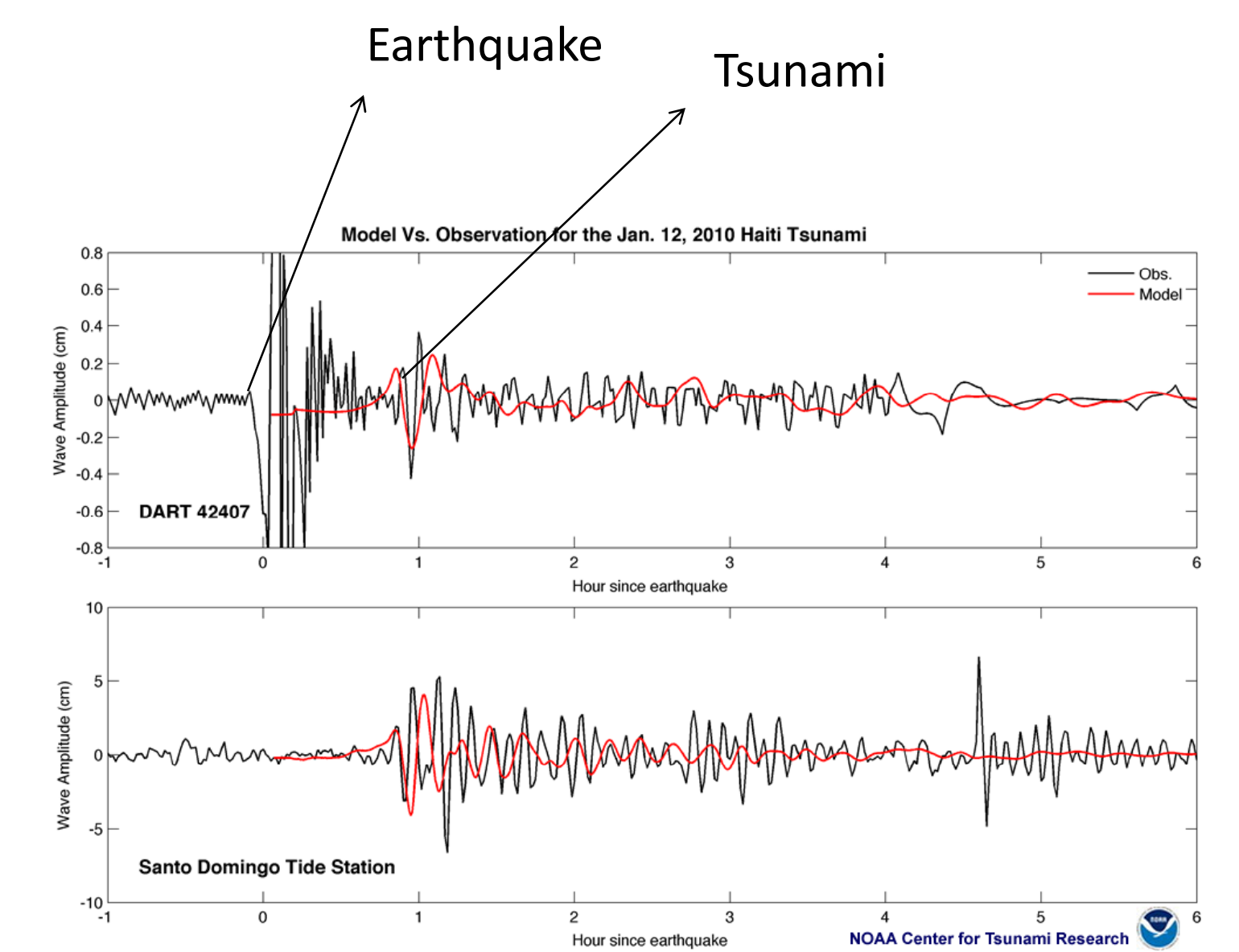
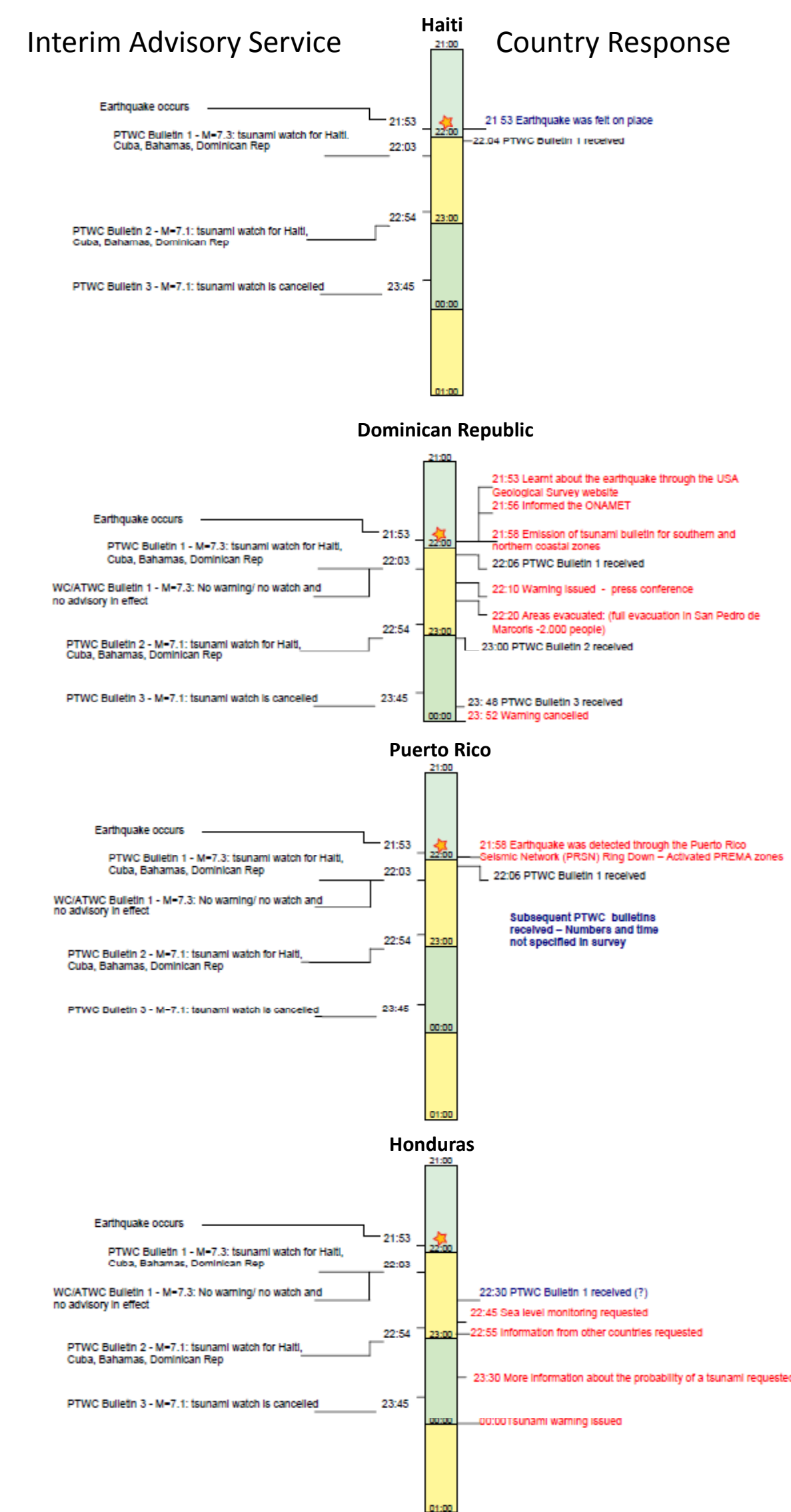
Preliminary tsunami wave heights determined by the NOAA Center for Tsunami Research, PMEL using NOAA forecast tools and the MOST model with the tsunami source inferred from USGS CMT solution and constrained by DART® data amplitudes (<http://nctr.pmel.noaa.gov/haiti20100112>).

Given the horrific number of deaths and the devastation caused by the January 12, 2010 Haiti Earthquake, most of the focus has been on its seismological aspects. Nevertheless, this earthquake also generated a tsunami which caused the death of at least 7 people. It caused flooding and damage both within the bay of Port Prince and the southern coast near Jacmel. The tsunami was also observed at the DART buoy in the Caribbean as well as the tide gauge in Port San Andrés in the Dominican Republic. At the tide gauge, located in a very protected harbor just east of Santo Domingo, the maximum peak to trough measurement of the tsunami was 12 cm. Local Tsunami Watches were issued by the PTWC for Haiti, Cuba, Bahamas and Dominican Republic. For other areas only an information message was issued by the PTWC and WCATWC for their areas of responsibility. Both landslide and coseismic sources were considered as sources for the tsunami. Modeling by the NOAA PMEL, Center for Tsunami Research, suggests that the tsunami was indeed generated by coseismic displacement. The UNESCO-IOC Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (CARIBE EWS) conducted an assessment on the performance of the warning system and the timeliness of the products issued by the interim providers of tsunami warning services, PTWC and WCATWC and the national and local response to these messages. Some of the results are summarized below in graphical and text form. This event highlights the extreme vulnerability of the region to earthquakes, but also to potential tsunamis which have claimed over 3510 lives in a little over 150 years.



Tsunami Water Heights and Damage in Haiti (Photos by H. Fritz, Georgia Tech University)

## Haiti Tsunami Response Timeline\*



Comparison of tsunami observations at Caribbean DART station and Port San Andres Tide Gauge near Santo Domingo, Dominican Republic with NOAA tsunami forecast.

The Secretariat of the UNESCO IOC CARIBE EWS, sent out a questionnaire to its 28 member states and territories. 22 responses were received. Some of the highlights of the survey are the following:

- 19 NTWCs received the first bulletins from PTWC/WC/ATWC
- 18 NTWCs received subsequent tsunami bulletins from PTWC
- 19 member states received information from other sources other than PTWC/WC/ATWC
- 7 member states and territories took some action before receiving the PTWC/WC/ATWC bulletin
- 15 took some action after receiving the PTWC/WC/ATWC bulletin
- A full evacuation was carried out only in the Dominican Republic
- 2 member states did not receive the first PTWC/WC/ATWC bulletin
- 1 member state did not receive any PTWC/WC/ATWC bulletin
- 6 undertook their own earthquake analysis
- 4 member states used numerical models in their analysis
- 4 member states issued a tsunami warning

\*UNESCO-IOC Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (CARIBE EWS), 2010, 12 January 2010 Haiti Earthquake and Tsunami Event Post-Event Assessment of CARIBE EWS Performance, IOC Technical Series 90.