

THE 1960 CHILEAN TSUNAMI

KIYOSHI HORIKAWA

- Initiation of Tsunami Studies in Japan
- Field Trip, Sanriku Coast (1955)
- U.C. Berkeley (1957-1959)
- The 1960 Chilean Tsunami (Japan)
- The 1960 Chilean Tsunami (Chile)
- The 1960 Chilean Tsunami (Hilo)
- Further Activities

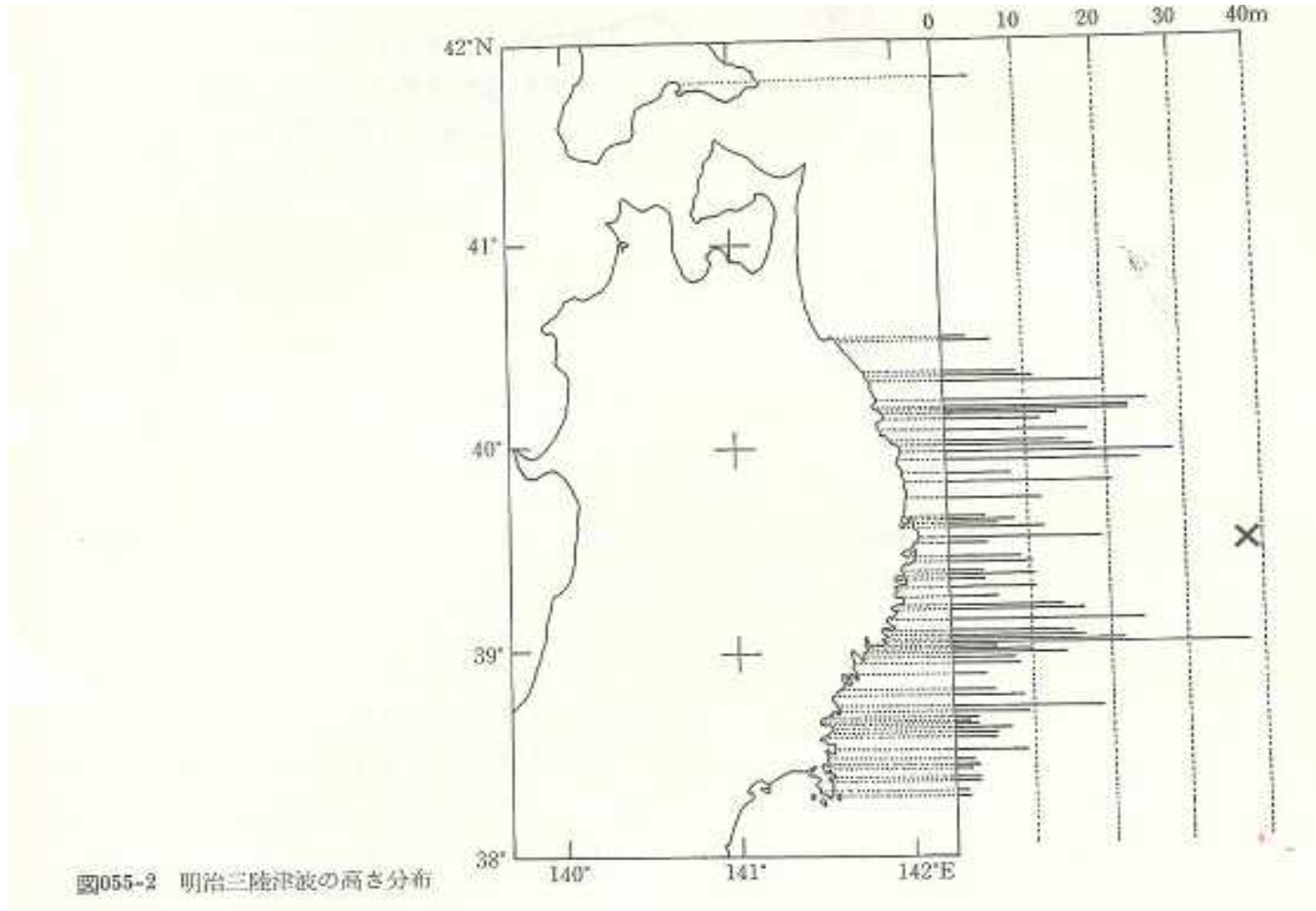
Initiation of Tsunami Studies in Japan

Initiation of Tsunami Studies in Japan
Field Trip, Sanriku Coast (1955)
U.C. Berkeley (1957-1959)
The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
The 1960 Chilean Tsunami (Hilo)
Further Activities

- Initiation of Earthquake Observation
(around 1872)
- Meiji Sanriku Tsunami (1896)
- Great Kanto Earthquake (1923)
- Earthquake Research Institute (ERI)
The Univ. of Tokyo (1925),
Tsunami & Storm Surge Section
- Showa Sanriku Tsunami (1933)
Separate Volume, Bulletin of ERI

Meiji Sanriku Tsunami (1896)

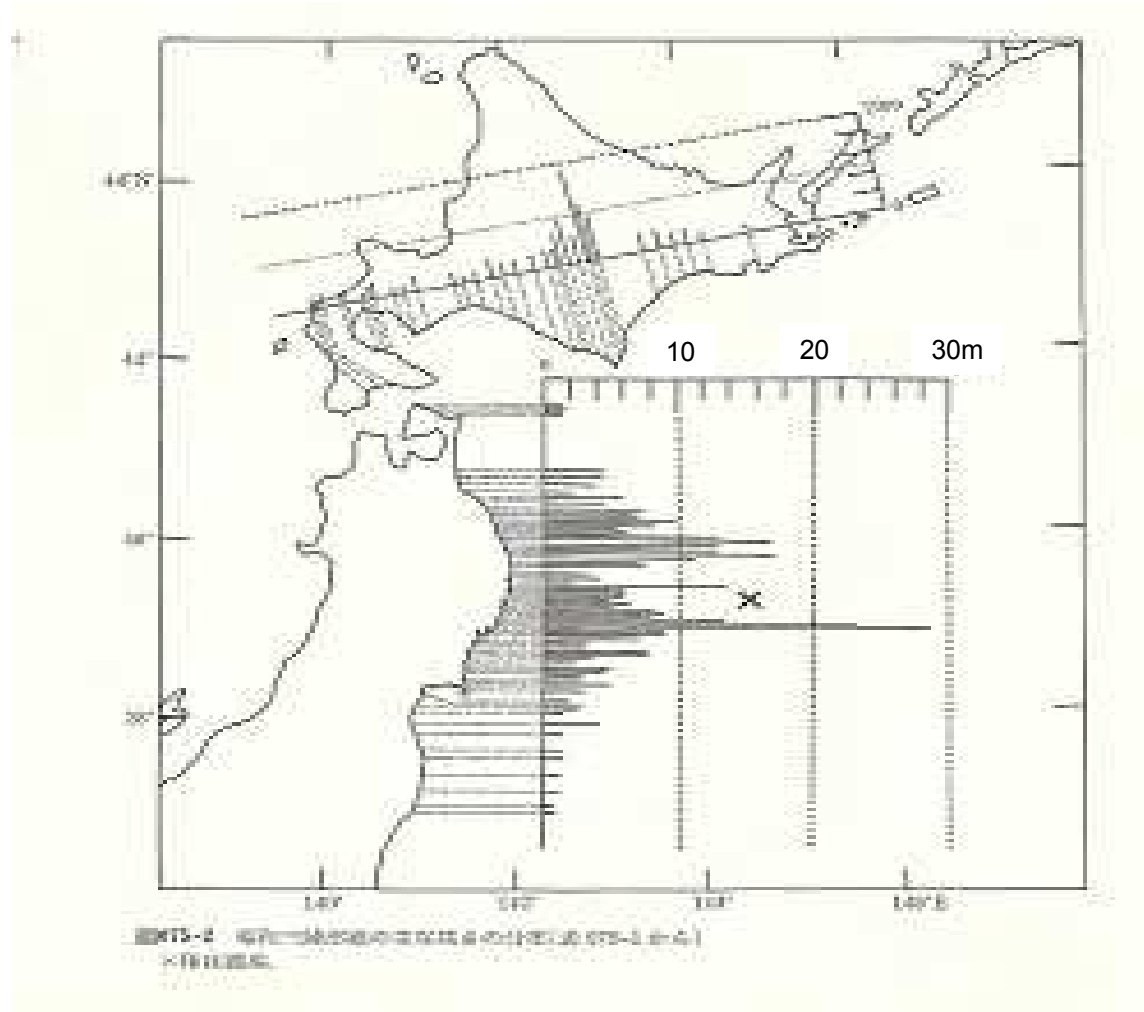
Initiation of Tsunami Studies in Japan
Field Trip, Sanriku Coast (1955)
U.C. Berkeley (1957-1959)
The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
The 1960 Chilean Tsunami (Hilo)
Further Activities



(Watanabe, H., 1998)

Showa Sanriku Tsunami (1933)

Initiation of Tsunami Studies in Japan
Field Trip, Sanriku Coast (1955)
U.C. Berkeley (1957-1959)
The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
The 1960 Chilean Tsunami (Hilo)
Further Activities



(Watanabe, H., 1998)

Showa Sanriku Tsunami (1933)

Initiation of Tsunami Studies in Japan
Field Trip, Sanriku Coast (1955)
U.C. Berkeley (1957-1959)
The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
The 1960 Chilean Tsunami (Hilo)
Further Activities



(Taro, before 1933 tsunami)

Showa Sanriku Tsunami (1933)

Initiation of Tsunami Studies in Japan
Field Trip, Sanriku Coast (1955)
U.C. Berkeley (1957-1959)
The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
The 1960 Chilean Tsunami (Hilo)
Further Activities



(Taro, after 1933 tsunami)

Field Trip, Sanriku Coast (1955)

Initiation of Tsunami Studies in Japan
Field Trip, Sanriku Coast (1955)
U.C. Berkeley (1957-1959)
The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
The 1960 Chilean Tsunami (Hilo)
Further Activities

Members:

Nasu, Shinji (ERI, UT)

Takahasi, Ryutaro (ERI, UT)

Hom-ma, Masashi (CE Dept., UT)

Horikawa, Kiyoshi (CE Dept., UT)

Itinerary:

Shizukawa – Kesenuma – RikuzenTakada –

Ofunato – Kamaishi – Miyako – Taro

U.C. Berkeley (1957-1959)

- Initiation of Tsunami Studies in Japan
- Field Trip, Sanriku Coast (1955)
- U.C. Berkeley (1957-1959)
- The 1960 Chilean Tsunami (Japan)
- The 1960 Chilean Tsunami (Chile)
- The 1960 Chilean Tsunami (Hilo)
- Further Activities

Takahasi, R. Research Scientist (1956-1957)

Model Basin, Richmond Field Station

Horikawa, K. Visiting Assistant Professor (1957-1959)

Assistant Research Engineer

Johnson, J.W. Professor

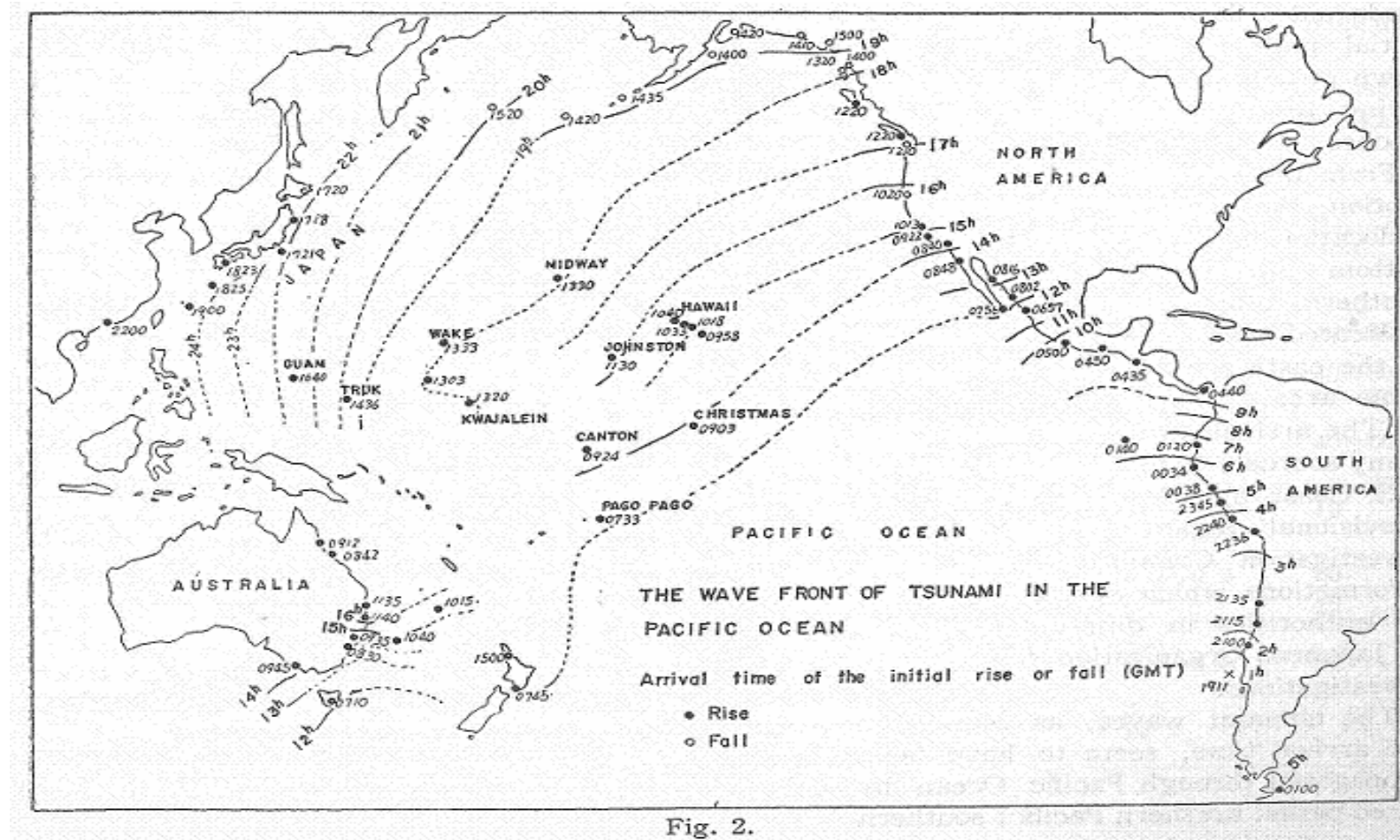
Wiegel, R.L. Associate Research Engineer

Lecturer, Associate Professor

The 1960 Chilean Tsunami (Japan)

Initiation of Tsunami Studies in Japan
Field Trip, Sanriku Coast (1955)
U.C. Berkeley (1957-1959)
The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
The 1960 Chilean Tsunami (Hilo)
Further Activities

The Wave Front of Tsunami in the Pacific Ocean



Takahasi, R. & Hatori, T.

Committee of the Field Investigation of the 1960 Chilean Tsunami

Chairman Takahasi, R. ERI, UT

Members about 100

- 1) Provisional Report of the Investigation, July 1960
(in Japanese)
- 2) Report on the Chilean Tsunami of May 24, 1960,
As Observed along the Coast of Japan, December
1961, 397 p. (in English or in Japanese)
Horikawa, K.: Tsunami Phenomena in the Light of
Engineering View Point, pp.136-150 (in English)

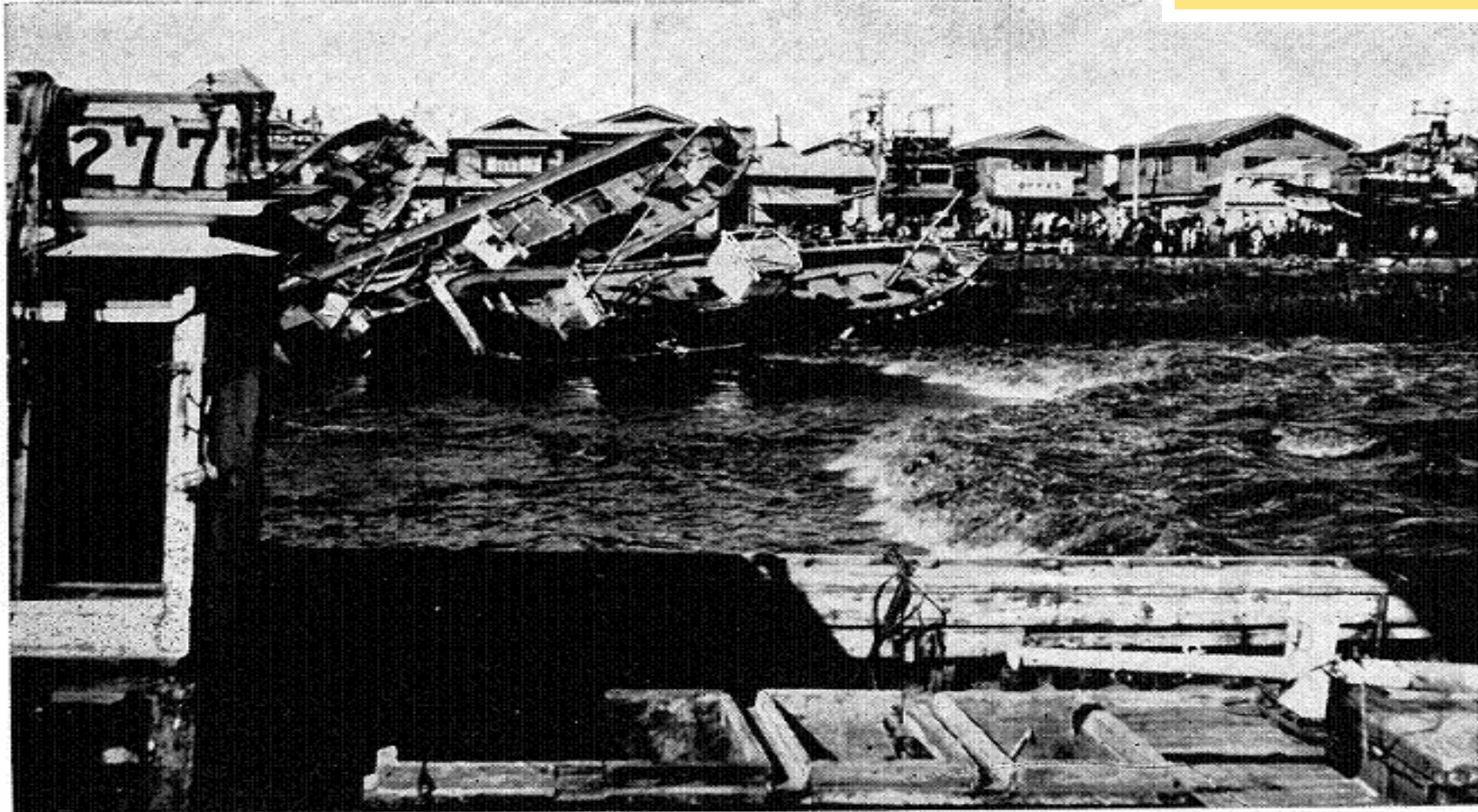


Fig. 11. Tsunami running upstream at the mouth of Niita River, Hachinohe, Aomori Pref. at 9 h 30 m, May 24. (Courtesy of Mr. Fusao Tabata.)

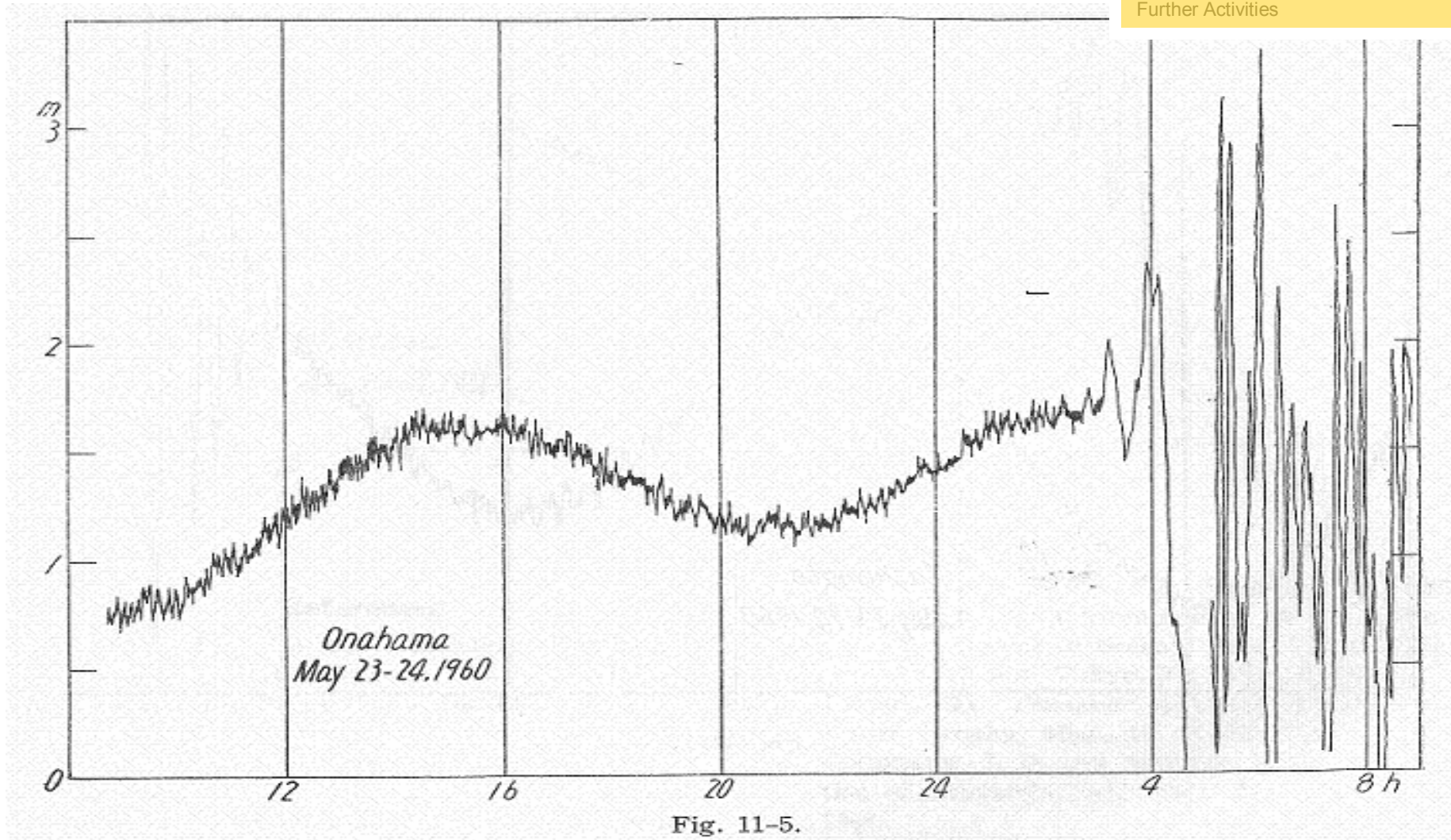


Fig. 21. House crushed down by a fishing boat at Ofunato, Iwate Pref. (Courtesy of Asahi Shimbun.),

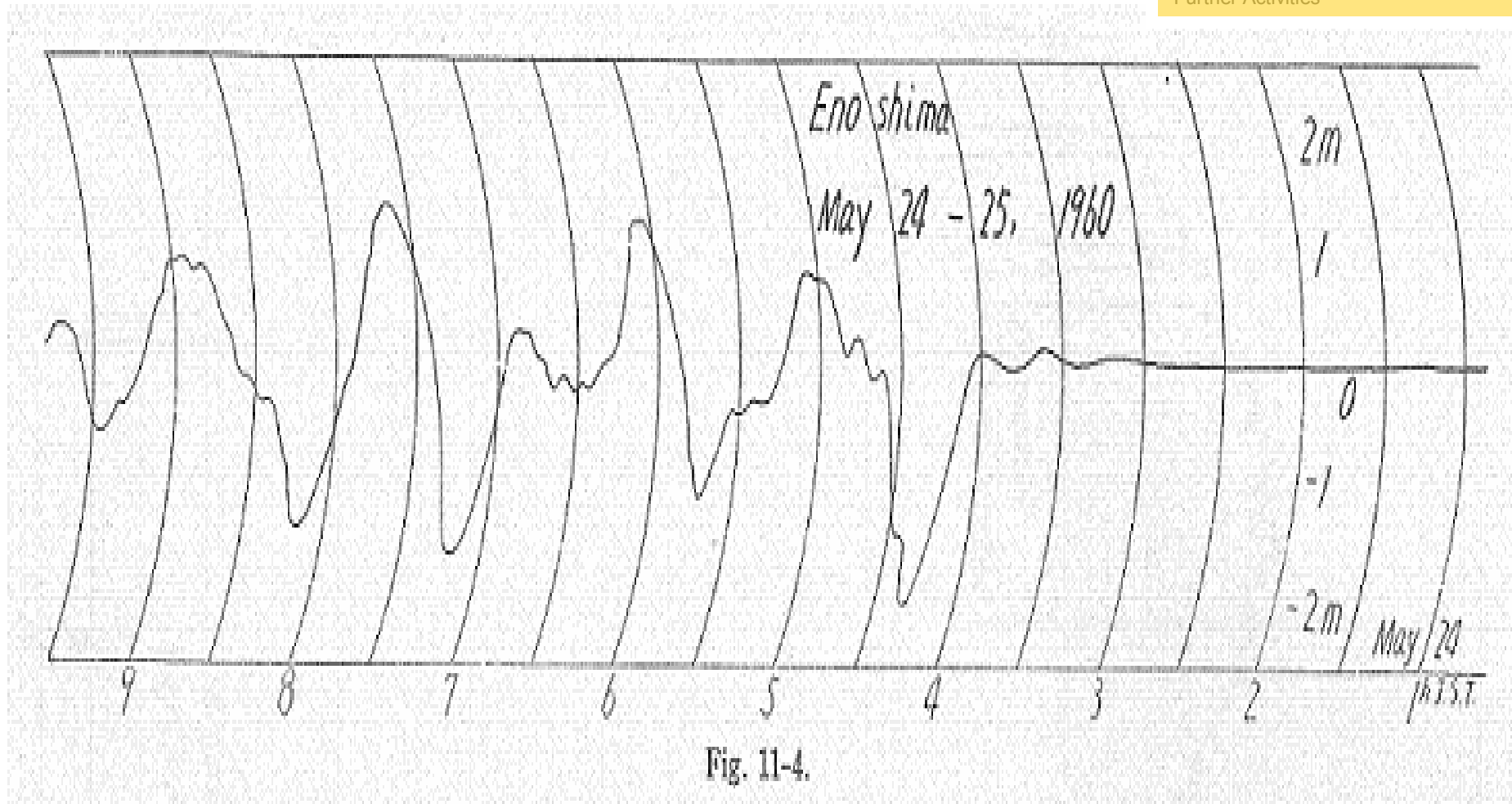


Fig. 39. Utter confusion of the Shimizu Harbour, Shimizu, Shizuoka Pref. caused by stray timbers. (Courtesy of Yomiuri Shimbun.)

Initiation of Tsunami Studies in Japan
Field Trip, Sanriku Coast (1955)
U.C. Berkeley (1957-1959)
The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
The 1960 Chilean Tsunami (Hilo)
Further Activities

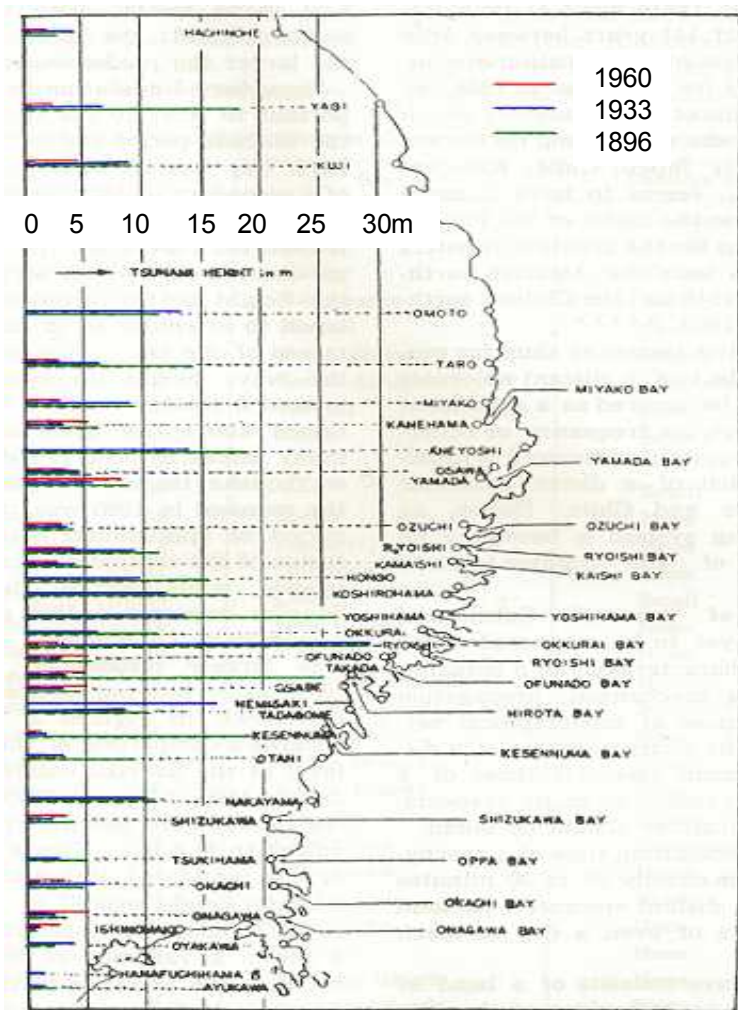


(Onahama)



(Eno-shima)

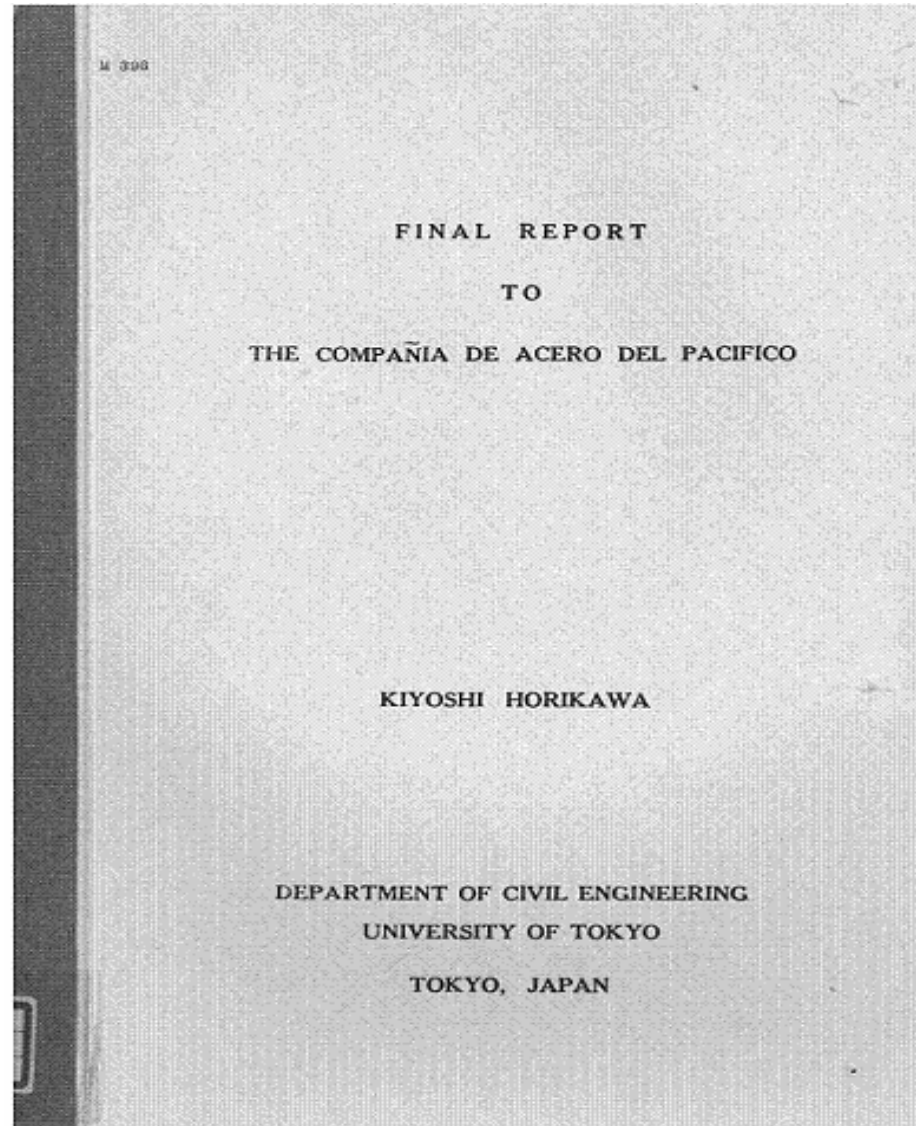
Initiation of Tsunami Studies in Japan
 Field Trip, Sanriku Coast (1955)
 U.C. Berkeley (1957-1959)
 The 1960 Chilean Tsunami (Japan)
 The 1960 Chilean Tsunami (Chile)
 The 1960 Chilean Tsunami (Hilo)
 Further Activities



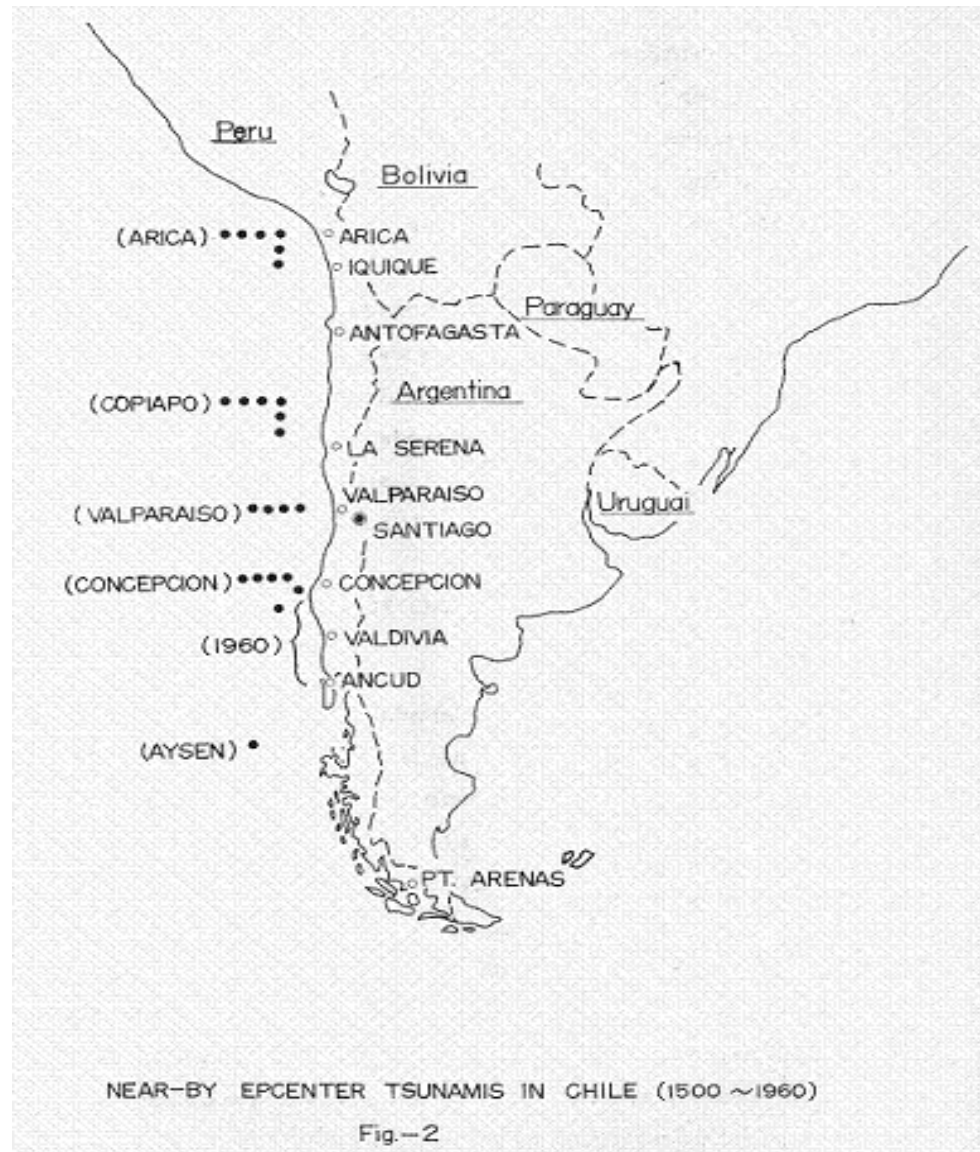
(Comparison of maximum water level due to tsunamis In 1896, 1933 and 1960)

The 1960 Chilean Tsunami (Chile)

Initiation of Tsunami Studies in Japan
Field Trip, Sanriku Coast (1955)
U.C. Berkeley (1957-1959)
The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
The 1960 Chilean Tsunami (Hilo)
Further Activities

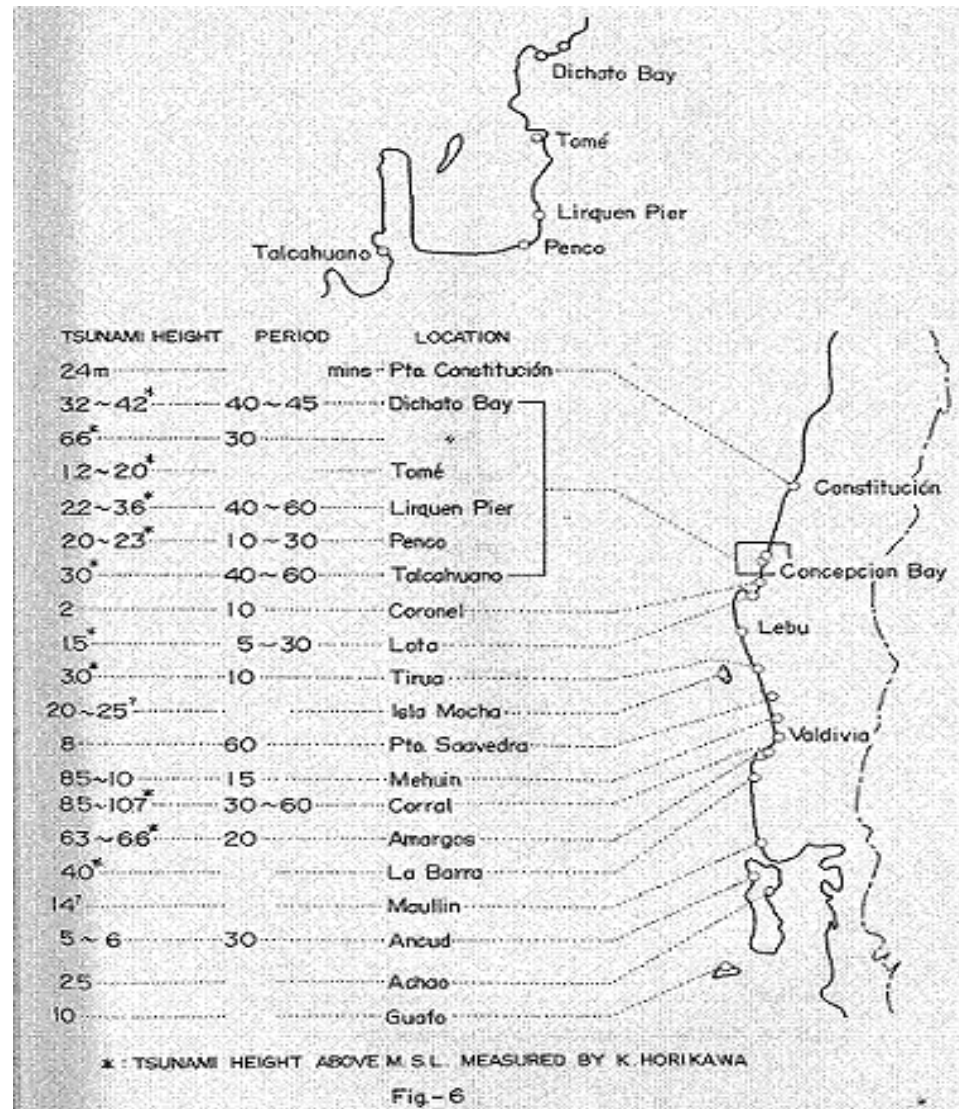


Initiation of Tsunami Studies in Japan
Field Trip, Sanriku Coast (1955)
U.C. Berkeley (1957-1959)
The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
The 1960 Chilean Tsunami (Hilo)
Further Activities



(1500-1960)

Initiation of Tsunami Studies in Japan
 Field Trip, Sanriku Coast (1955)
 U.C. Berkeley (1957-1959)
 The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
 The 1960 Chilean Tsunami (Hilo)
 Further Activities







Rio Valdivia of Chile, 1960, courtesy
Prof Towhata, The Univ of Tokyo

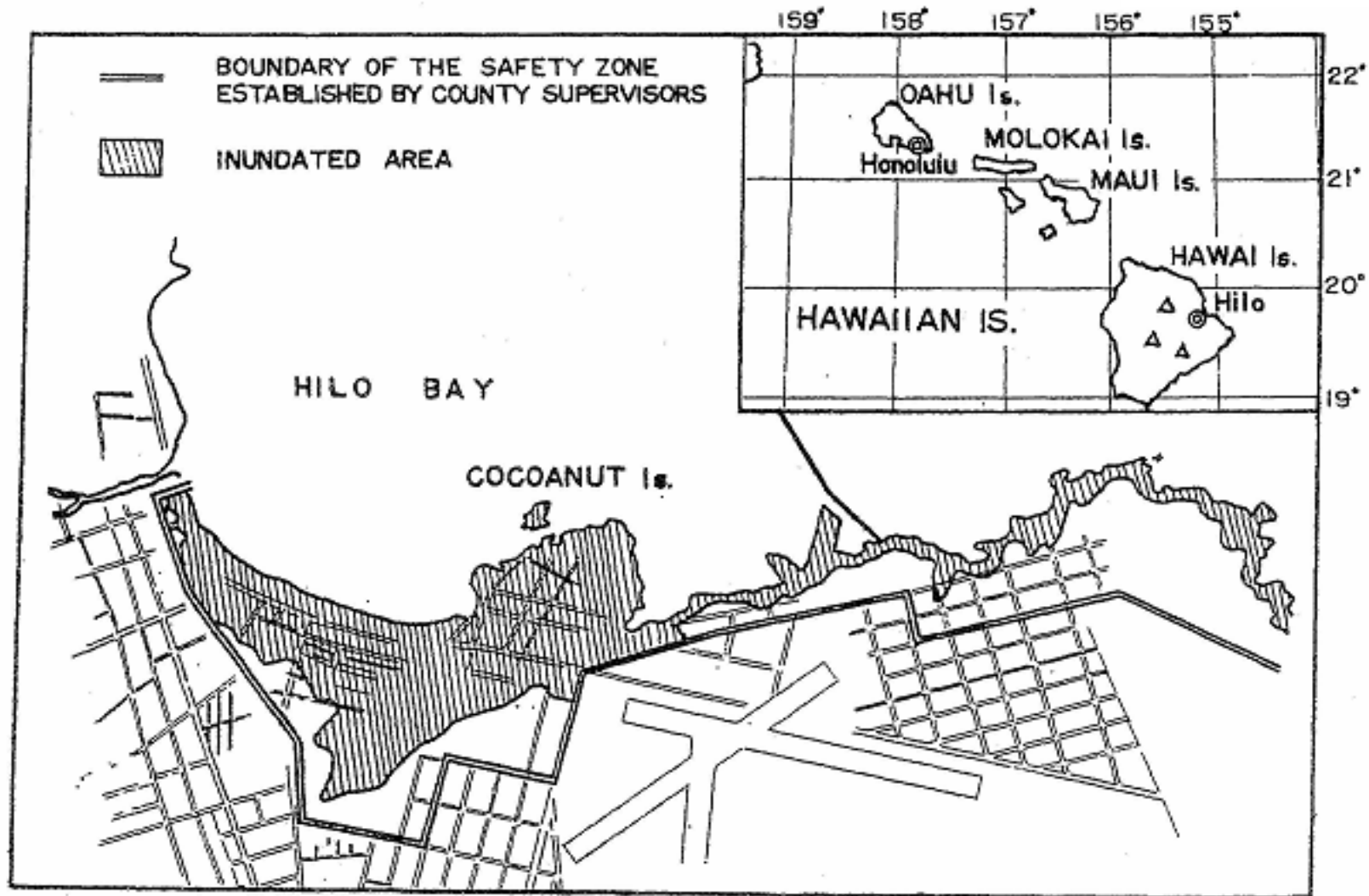
The 1960 Chilean Tsunami (Hilo)

Initiation of Tsunami Studies in Japan
Field Trip, Sanriku Coast (1955)
U.C. Berkeley (1957-1959)
The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
The 1960 Chilean Tsunami (Hilo)
Further Activities



Tsunami of May 22, 1960, Hilo, Hawaii. Originated from Earthquake in Chile.

Initiation of Tsunami Studies in Japan
Field Trip, Sanriku Coast (1955)
U.C. Berkeley (1957-1959)
The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
The 1960 Chilean Tsunami (Hilo)
Further Activities



Technical Committee on Tsunami Disaster Prevention in Hilo

Members:

From Japan

Suzuki, M.

Takahashi, R.

Hom-ma, M.

From U.S.A.

Cox, D.C.

Munk, W.H.

Wiegel, R. L.

Laboratory Investigation

Look Hydraulic Laboratory, University of Hawaii

Further Activities

Initiation of Tsunami Studies in Japan
Field Trip, Sanriku Coast (1955)
U.C. Berkeley (1957-1959)
The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
The 1960 Chilean Tsunami (Hilo)
[Further Activities](#)

Tsunami Symposium, Organizer Cox, D.C., in 1961
Takahashi, R., Kajjura, K. & Horikawa, K.

National Science Foundation Workshop, “Tsunamis”,
May 1979

International Workshop on Long-Wave Runup Models,
US National Science Foundation.

Tsunami Protection Dike, Taro

Initiation of Tsunami Studies in Japan
Field Trip, Sanriku Coast (1955)
U.C. Berkeley (1957-1959)
The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
The 1960 Chilean Tsunami (Hilo)
[Further Activities](#)



Tsunami Forest, Rikuzen Takada

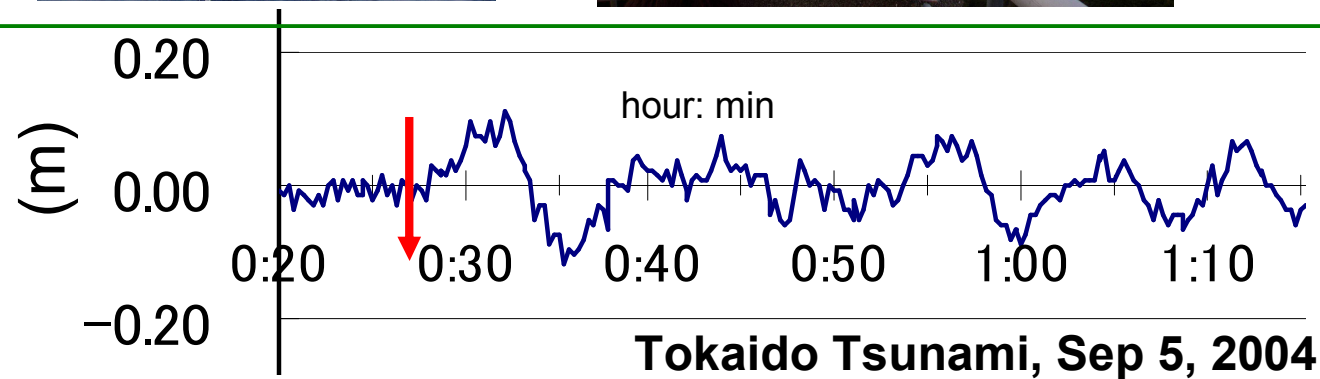
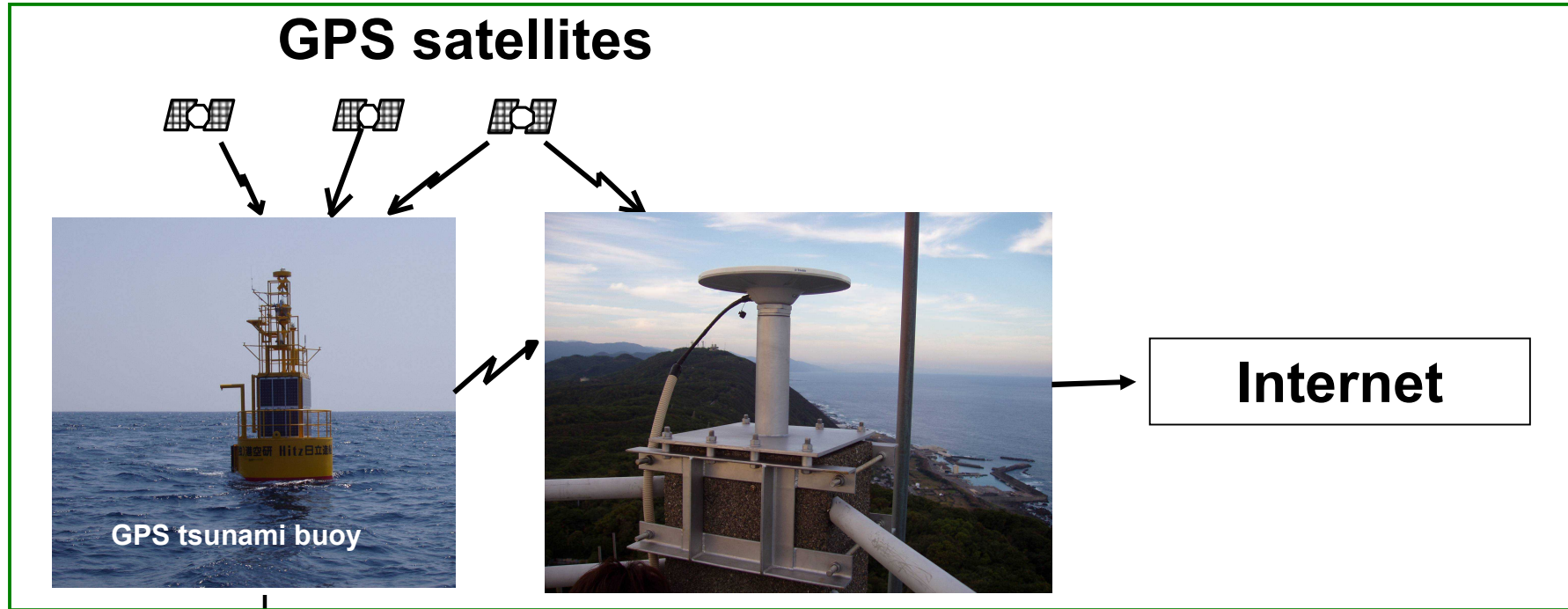
Initiation of Tsunami Studies in Japan
Field Trip, Sanriku Coast (1955)
U.C. Berkeley (1957-1959)
The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
The 1960 Chilean Tsunami (Hilo)
[Further Activities](#)



GPS Tsunami detection system

Initiation of Tsunami Studies in Japan
Field Trip, Sanriku Coast (1955)
U.C. Berkeley (1957-1959)
The 1960 Chilean Tsunami (Japan)
The 1960 Chilean Tsunami (Chile)
The 1960 Chilean Tsunami (Hilo)
Further Activities

Off Muroto 13km, h=100m



Courtesy Dr. Takahashi,
PARI

Thank you for attention.

