

19. 伊豆震災地一二等三角點水平 移動成果報告

大正十二年關東大地震後伊豆半島をも包む關東一帶の三角測量が陸地測量部の手によりて行はれたり。最近伊豆地震の直後、同測量部が我地震研究所の委嘱によりて更に同地方の一二等三角點につき二等三角測量を行へり。此を明治十七年に行はれたる舊測量結果と比較せるもの及び關東大地震後の測量結果と舊測量結果とを比較せるものを對照せしめたるものを第一圖に示す。又、伊豆地震直後の測量結果を關東大地震後の測量結果と比較せるものを第二圖に示す。

尙、各觀測に關する詳細事項を示せば下記の如し。

1. 觀測年次

舊測量	明治十七年
關東震災復舊測量（以下關東と略稱す）	大正十四・五年
新測量	昭和六年二月及三月

2. 觀測法

各觀測共に二等經緯儀を用ひ六測回の方向觀測法による。

3. 計算の要領

三角點の移動量は舊觀測値、關東觀測値及新觀測値を以て次の假定及方法により算定したる舊經緯度、關東經緯度及新經緯度に基き舊位置に對する關東震災（--→）及伊豆震災（—→）の移動量を算出せり。（第一圖）

但し根古屋村三角點は關東測量に際し再設したるものなるを以て之を除く。

a. 經緯度計算に關する假定

各測量共に愛應山三角點を不動とし同點より冠ヶ岳三角點に對する方位を不變と假定せり。

b. 觀測角の平均

各測量の觀測値につき同一順序を以て網の平均法により計算せり。但關東測量に關しては其實施したる北半部につき算定せり。

c. 距離の計算

各三角點相互の距離は前項により決定したる平均角と次に示す與邊とによ

り算定せり。

舊 與 邊 愛鷹山一冠ヶ岳とし關東震災比較計算に於ける舊値

關東與邊 同

新値

新 與 邊 德倉山一大場村とし昭和六年五月田方郡函南村に在る農學校西
側に選定したる基線より發し二回の増大により決定したる値

4. 測定の精度

網の平均による一方向の中等誤差を $\pm \sqrt{\frac{Pvv}{r}}$ により算定す。其の値次の如し。

舊 測 量	$\pm 2''.52$	P は重量
關東測量	$\pm 1''.87$	v は剩餘
新 測 量	$\pm 0''.99$	r は規約方程式の數

[昭和六年十二月二日・地震研究所]

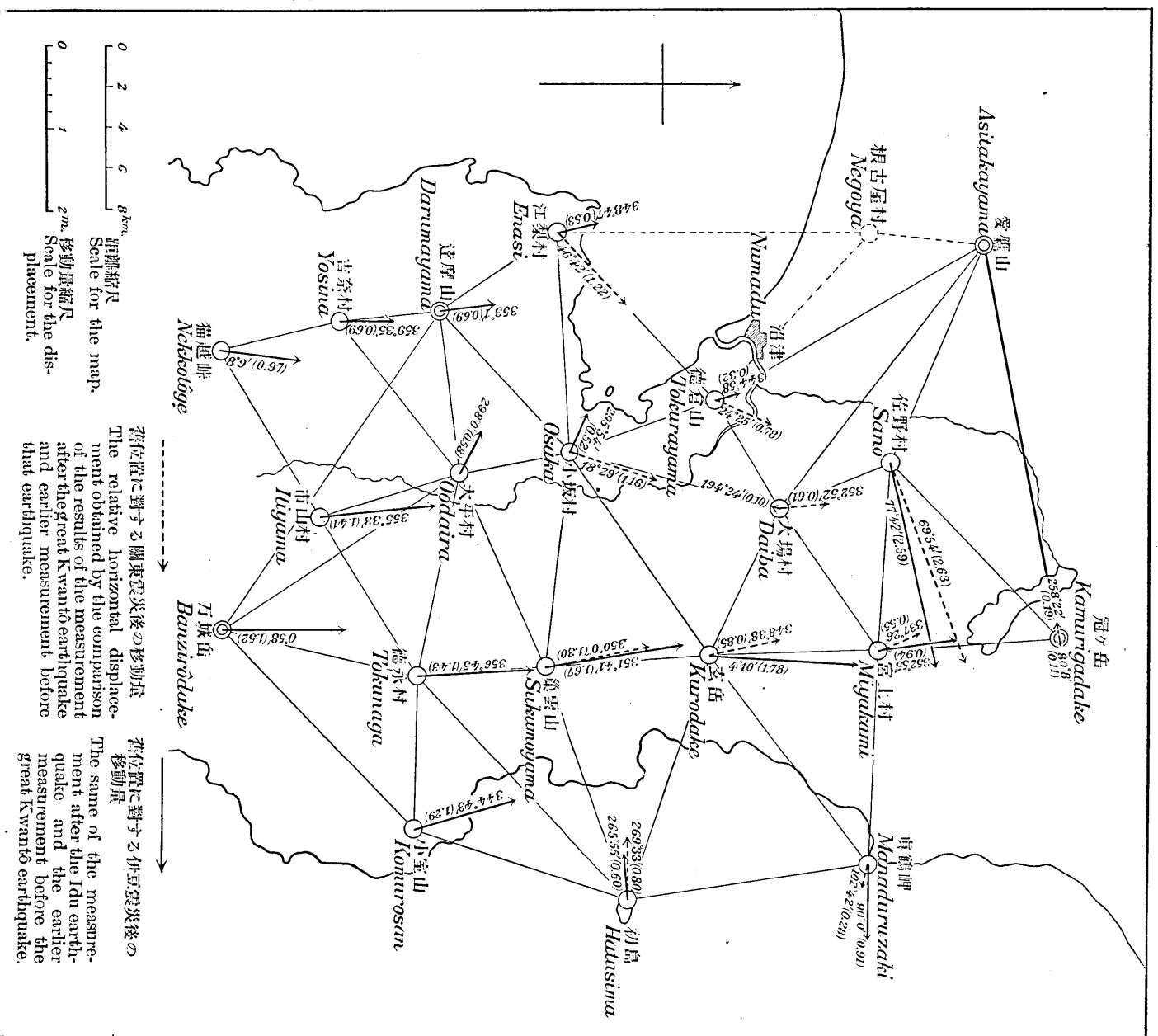
19. Horizontal Displacements of the Primary and Secondary Triangulation Points in Idu Earthquake Districts.

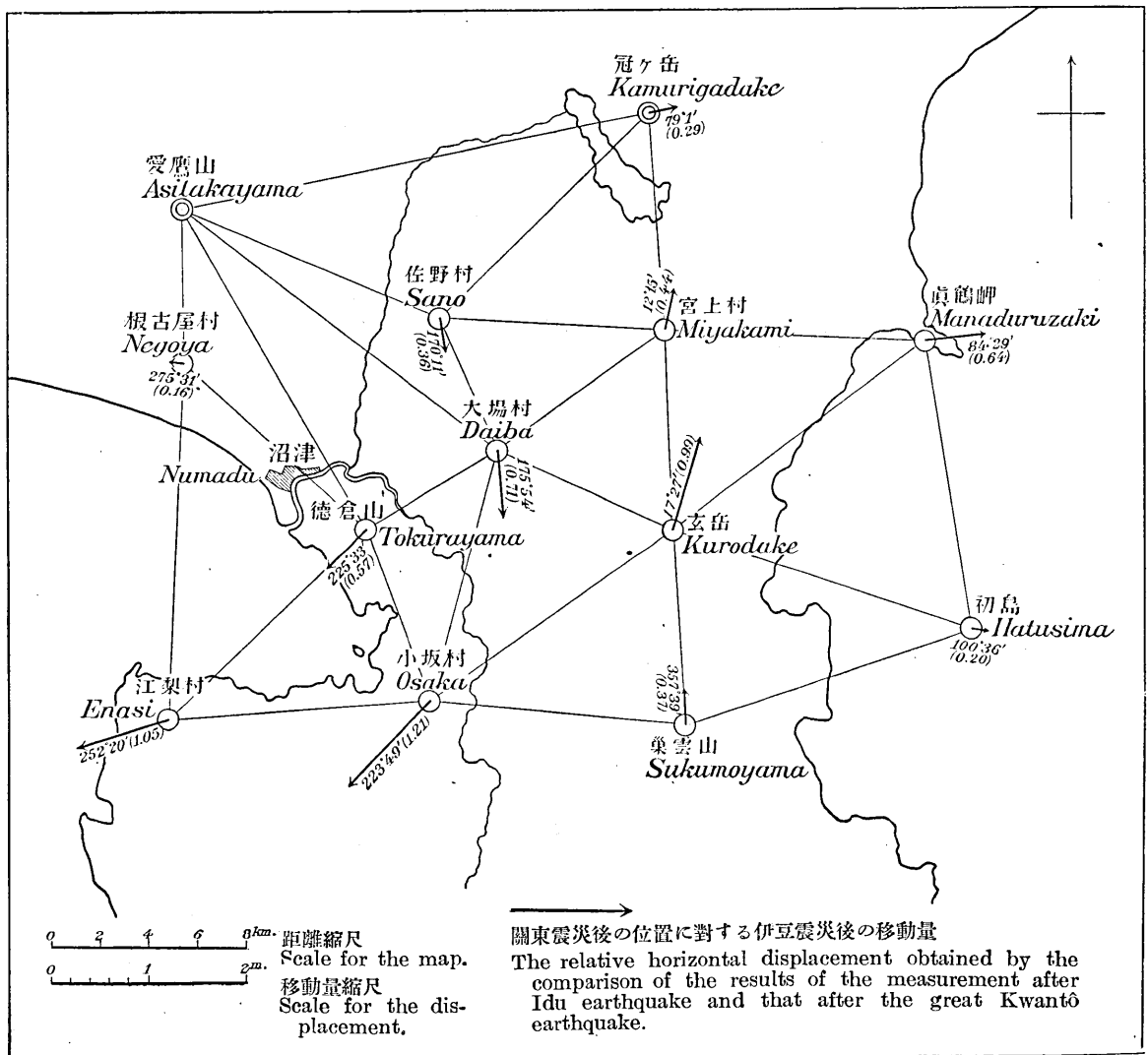
After the great Kwantô earthquake of September 1, 1923, a revision of the triangulation in the disturbed region including the Province of Idu was carried out by the Land Survey Department. At our request the Department made, again, a trigonometrical survey in the same province during a period, which is just after the recent Idu earthquake of November 26, 1930, in order to know the magnitudes of horizontal movements of certain primary and secondary triangulation points due to the earthquake occurrence.

The full arrows in Fig. 1 show the relative horizontal displacements of the triangulation points obtained by the comparison of the result of the earlier measurements before the Kwantô earthquake and that after the Idu earthquake, while the broken arrows in the same figure represent the similar relative displacements obtained by the comparison of the results of the measurements before and after the Kwantô earthquake. Fig. 2 give the relative horizontal displacements acquired by the comparison between the result of measurements after Kwantô earthquake and that after Idu earthquake. The periods of the field works for the three measurements were as follows:

- I. The earlier survey: in 1884.
- II. Survey after the great Kwantô earthquake: 1925-1926.
- III. Survey after the Idu earthquake: February-March, 1931.

For each survey, the coordinates of Asitakayama and the direction of the line joining this point and Kamurigatake were assumed unchanged. The distances between respective triangulation points were culculated from each mean of observed angles and





第二圖 伊豆震災地一二等三角點水平移動圖 (B)

Fig. 2. Map showing the Horizontal Displacements of the Primary and Secondary Triangulation Points in Idu Earthquake Districts (B)

the length of the base line shown below :

- I. The earlier survey : the distance between Asitakayama and Kamurigatake.
 - II. Survey after the great Kwantô earthquake : the postseismic distance between the same two points.
 - III. Survey after Idu earthquake : the distance between Tokurayama and Daiba.
- The probable errors of measurements are as follows :

$$m = \pm \sqrt{\frac{Pv}{r}} \quad \begin{array}{ccc} \text{I} & \text{II} & \text{III} \\ \pm 2''.52 & \pm 1''.87 & \pm 0''.99 \end{array}$$

where P is the weight, v the residual and r the number of equations.

(Dec. 2, 1931. Earthquake Research Institute.)