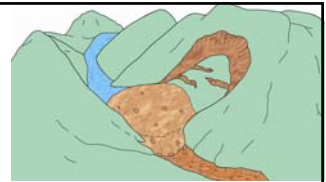


Clarification on the Internal Structure of Landslide Dam by Microtremor array survey method

Yasuhiro Mitani (Shimane University)
Fawu WANG
Austin Chukwueloka OKEKE
Yohei KUWADA
Taiki ADACHI
Hufeng YANG
Fikri FARIS

Landslide dam

It is formed by backing up river current due to landslide.



Failure factor

① Failure due to overflow erosion



② Failure due to sliding failure



③ Failure due to progressive failure



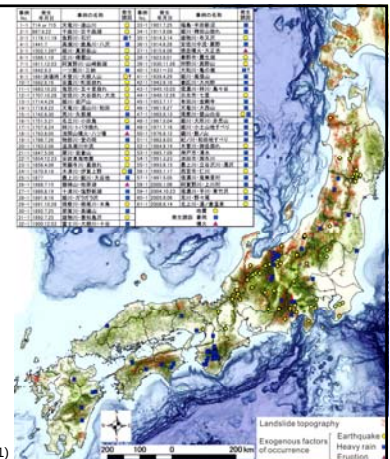
(Civil Engineering Research Institute, 2008)

Natural dams in the world



Formation sites of landslide dam in Japan

Formation of landslide dam centers site is related to **topographic** and **geological conditions, natural phenomena** (earthquake, heavy rain, eruption).



Past study outcome

From the aspect of topography and geology, hydrology, study of landslide dam made progress. Therefore, precision of failure and countermeasure techniques were developed.

Matter of present situation

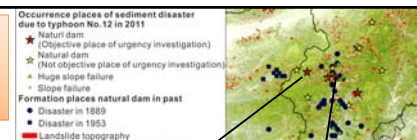
Not understand about the internal structure of landslide dam.

Less-advanced about study of progressive failure that is depended on the internal structure of landslide dam.

Study purpose

Clarify the internal structure of landslide dam using geophysical exploration.

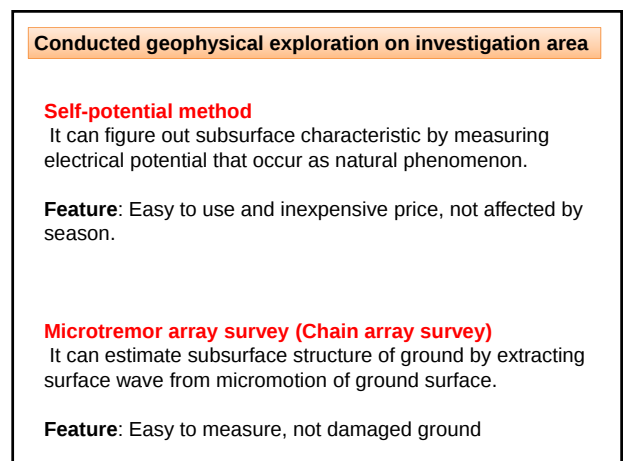
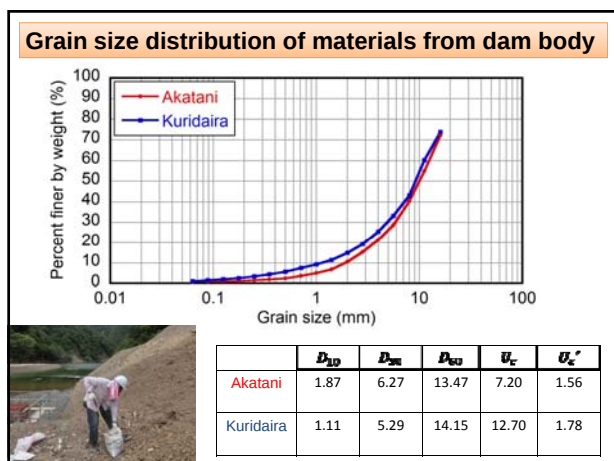
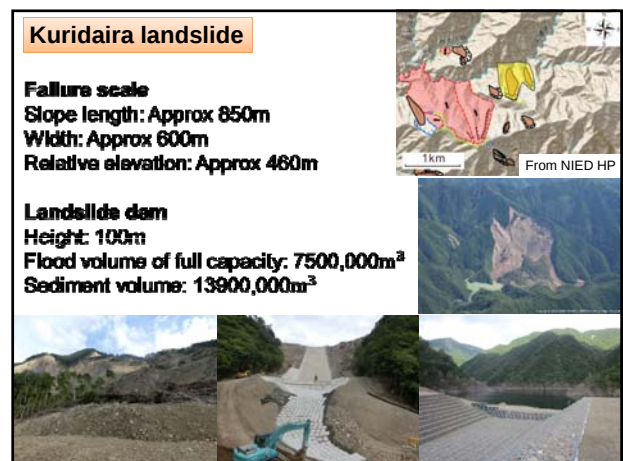
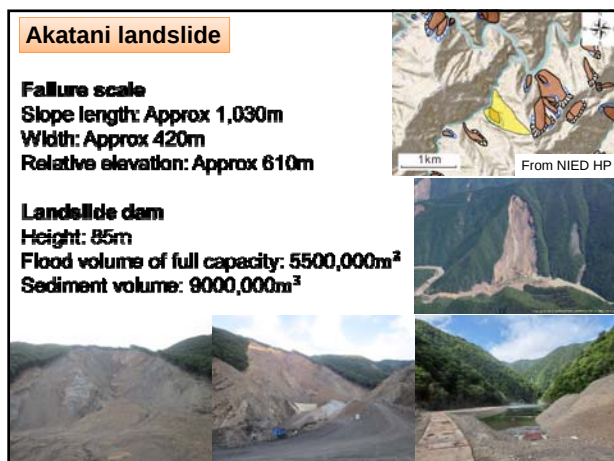
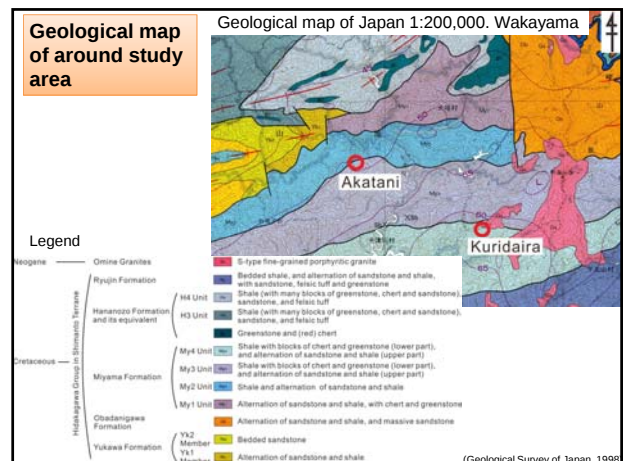
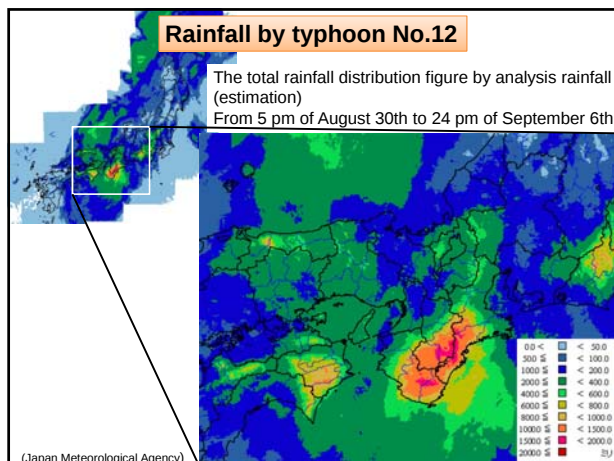
Occurrence distribution of Sediment disaster in Kii peninsular

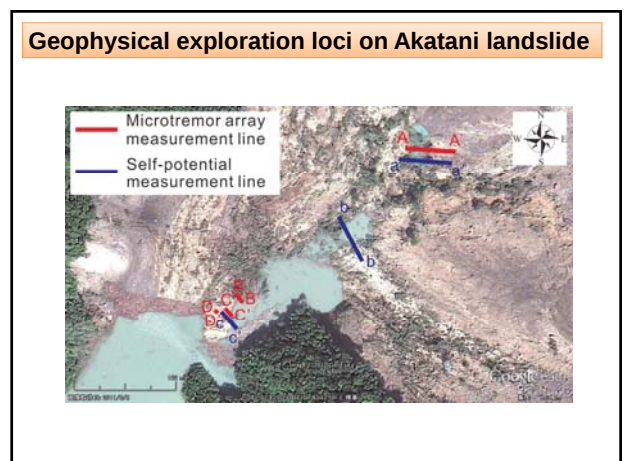
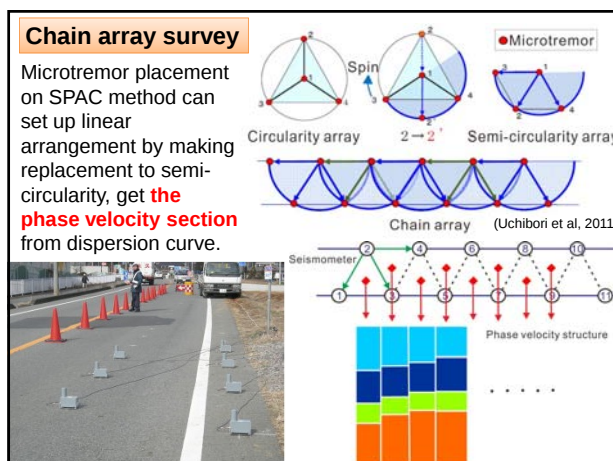
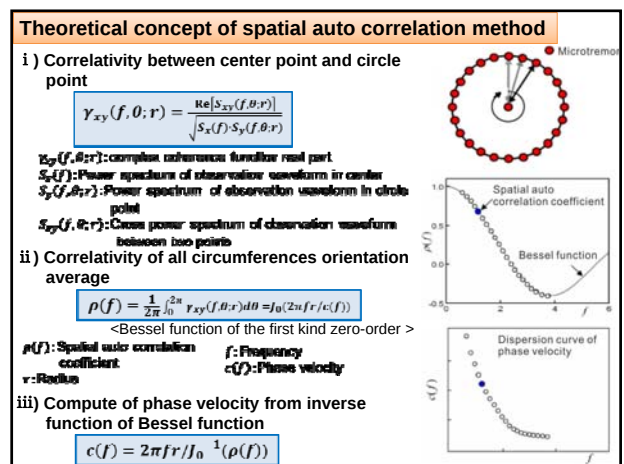
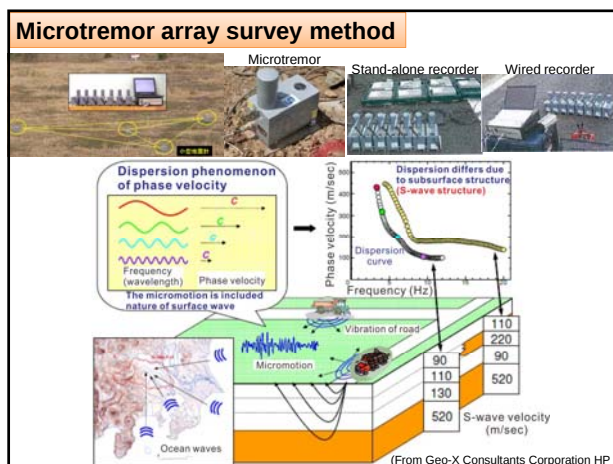
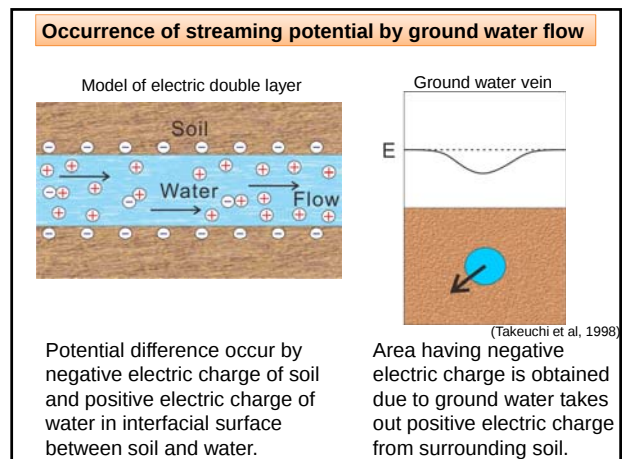
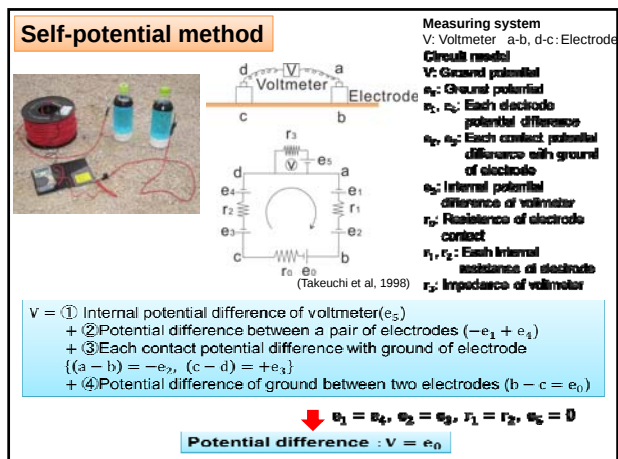


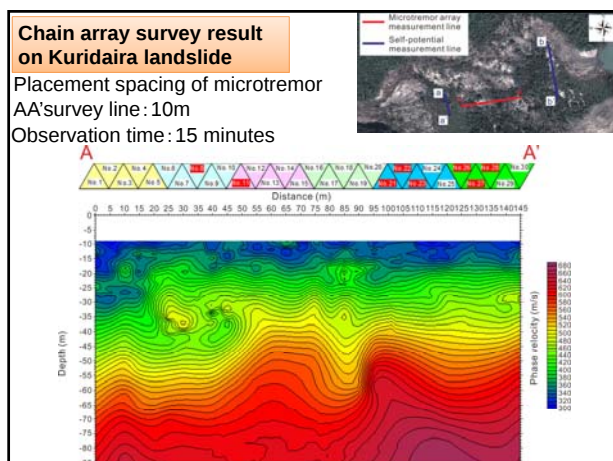
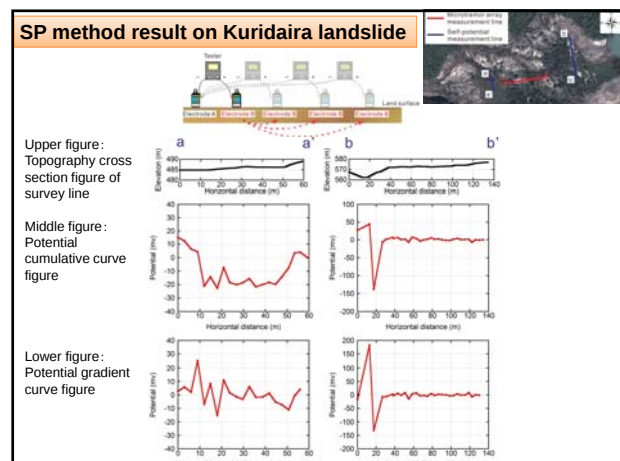
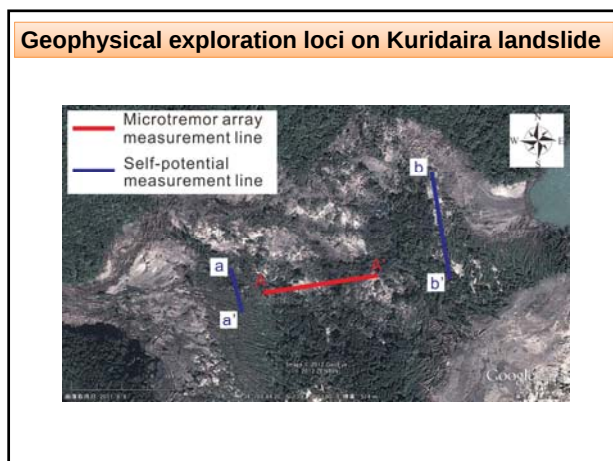
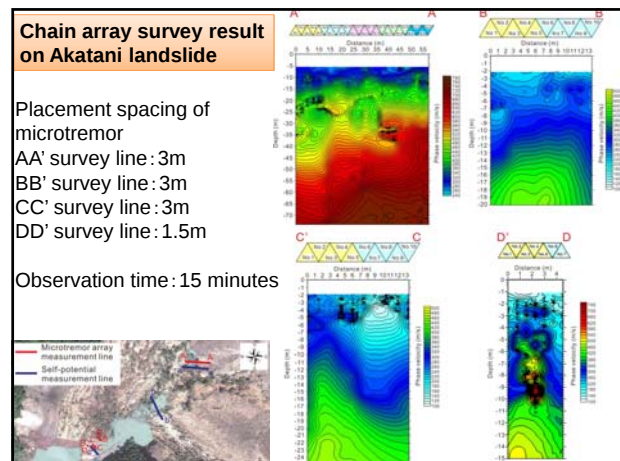
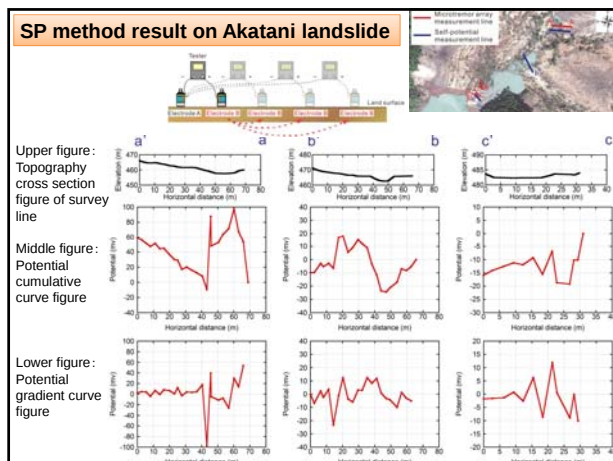
Huge slope failure: 32 places
Landslide dam formation: 17 places
Five places of those are objective of urgency investigation (MLIT)



(Mizuya et al, 2011)







Conclusion

Conclusion of Akatani landslide dam

- There are changing sites of streaming potential, then it can presume that those sites are ground water vein from lake.
- Surface layer of dam is soft layer and high void ratio. Layer thickness of dam internal is not showed uniformity, was deposited as disturbance state.

Conclusion of Kuridaira landslide dam

- Changing sites of streaming potential was measured near drainage during construction.
- Surface layer of dam is soft layer and high void ratio. Dip angle is gradual, dip direction trended downstream.

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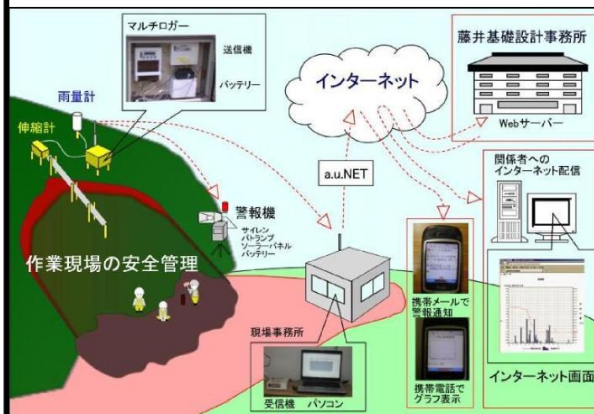
株式会社ワールド測量設計



土と基礎に関する設計

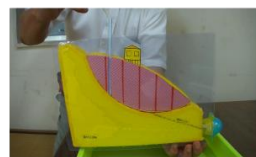
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Real-Time Measurements and Monitoring



- ・ Monitoring on Landslides by PC and your Cell Phone
- ・ Mailing Alarm system

Demonstration and Seminar



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