

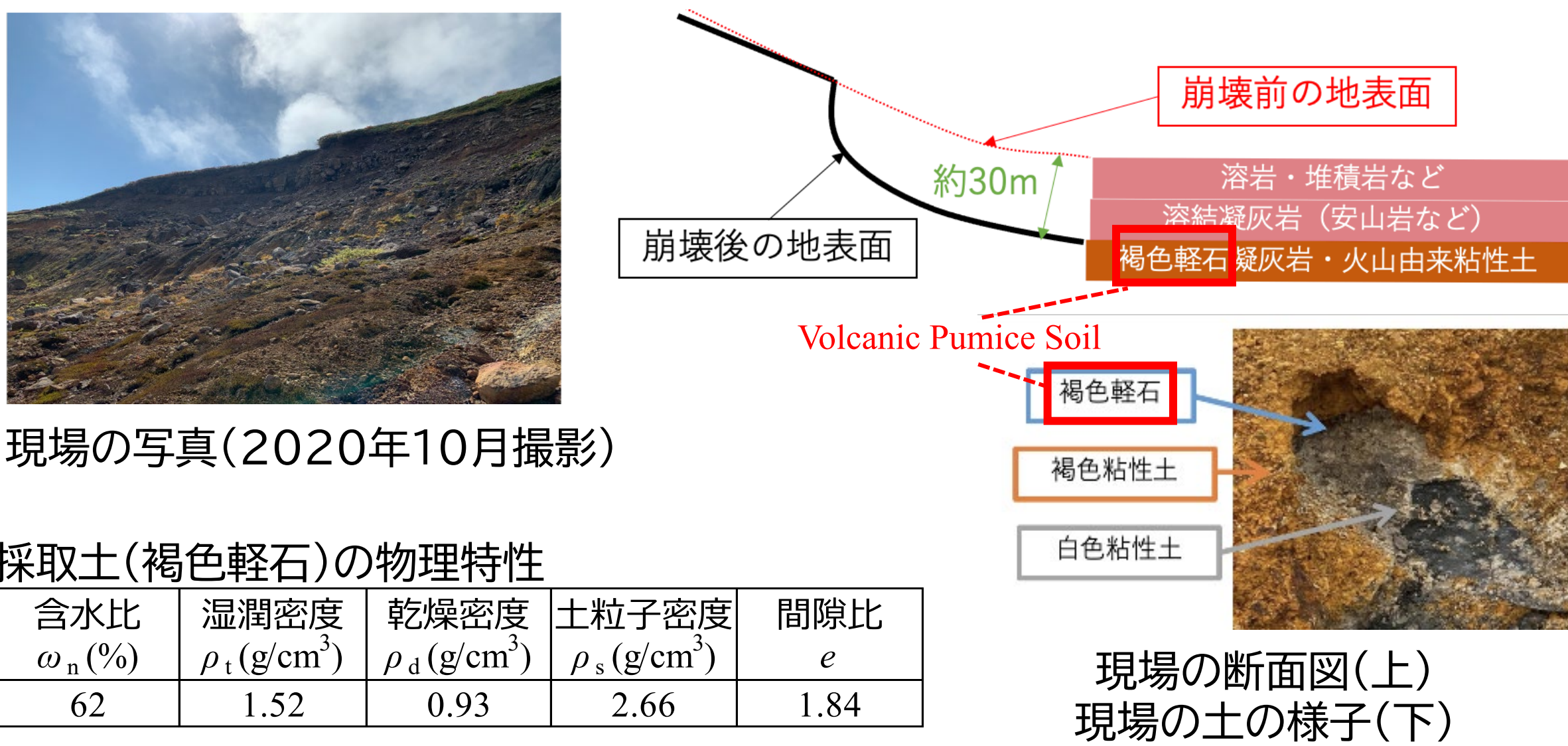
Triaxial compression behaviour of undisturbed and re-constituted volcanic pumice soil taken from Dozo-zawa river

ドゾウ沢火山性軽石の不攪乱・再構成供試体の三軸圧縮挙動

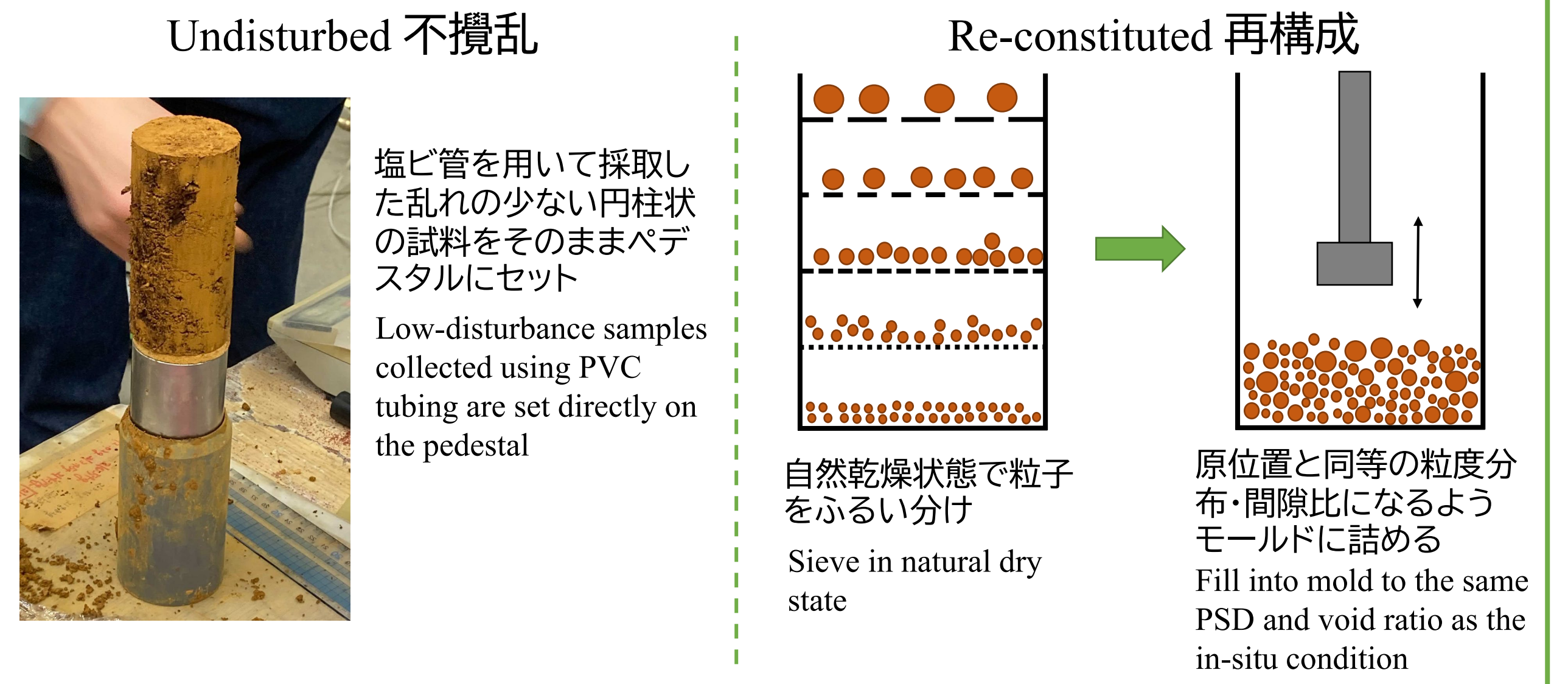
The Iwate-Miyagi Nairiku Earthquake (M7.2) that occurred on June 14, 2008 caused a slope failure in Dozo-zawa River near the summit of Mt. Kurikoma. The debris flow caused by the slope failure flowed for about 10 km and took the lives of 7 people. The mechanisms of the slope failure and long-distance debris flow have not yet been well understood. In this study, undisturbed and re-constituted specimens were prepared using brown pumice soil collected from the collapsed area. Shear behavior and particle breakage were investigated by performing a series of triaxial compression tests.

2008年6月14日に発生した岩手・宮城内陸地震(M7.2)によって栗駒山の山頂付近で大規模な斜面崩壊が起こりました。斜面崩壊に起因する土石流がドゾウ沢を約10kmに渡って流下して死者7名という大きな被害をもたらしたものの、斜面崩壊や長距離流動のメカニズムは未だ解明されていません。本研究では、崩壊地で採取した褐色軽石を用いて不攪乱・再構成供試体を作成し、圧密排水/非排水三軸圧縮試験(CD/CU試験)を行って起因層となった土のせん断挙動と粒子破碎について考察しました。

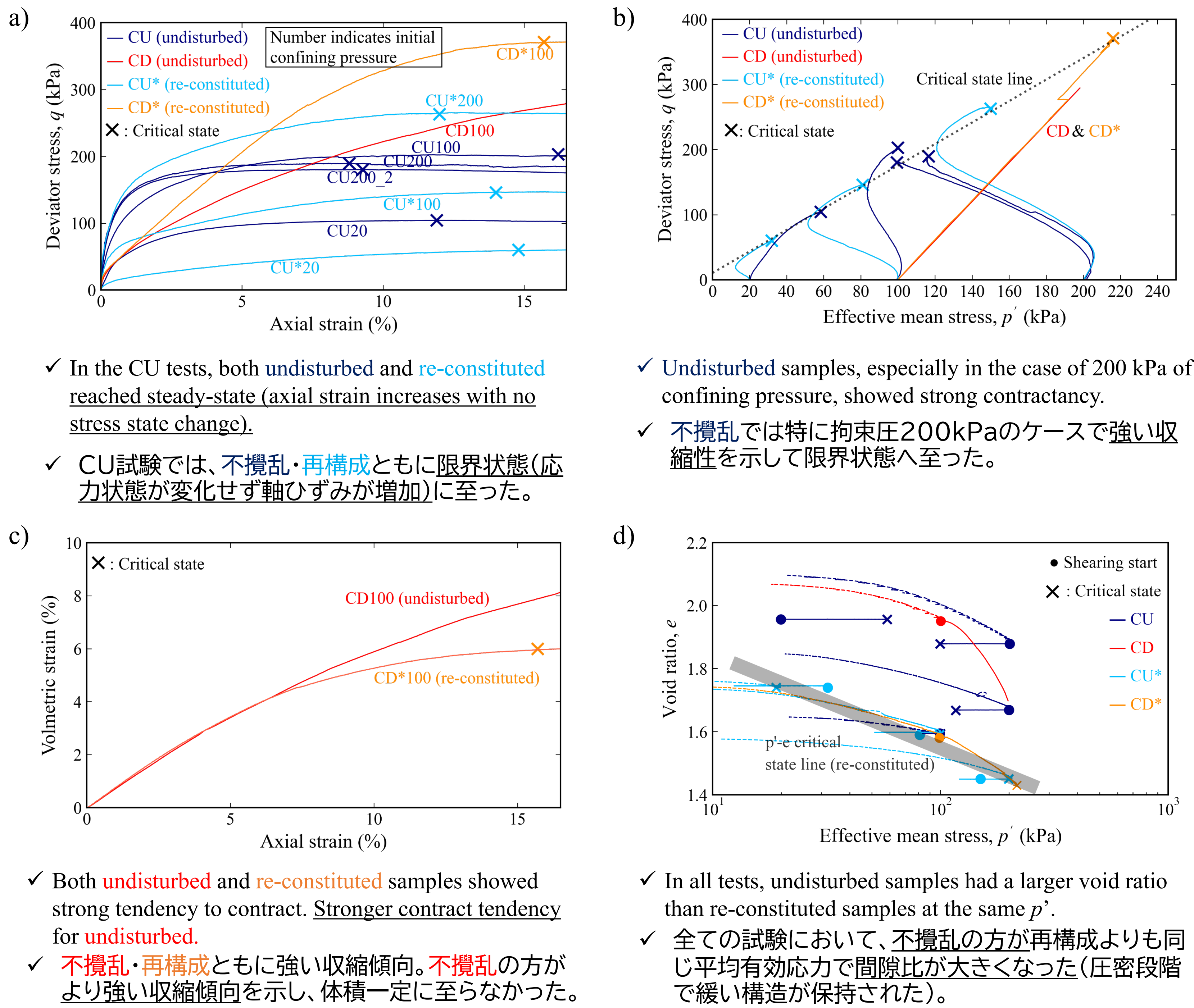
1. Overview of Dozo-zawa river collapsed area ドゾウ沢崩壊地の概要



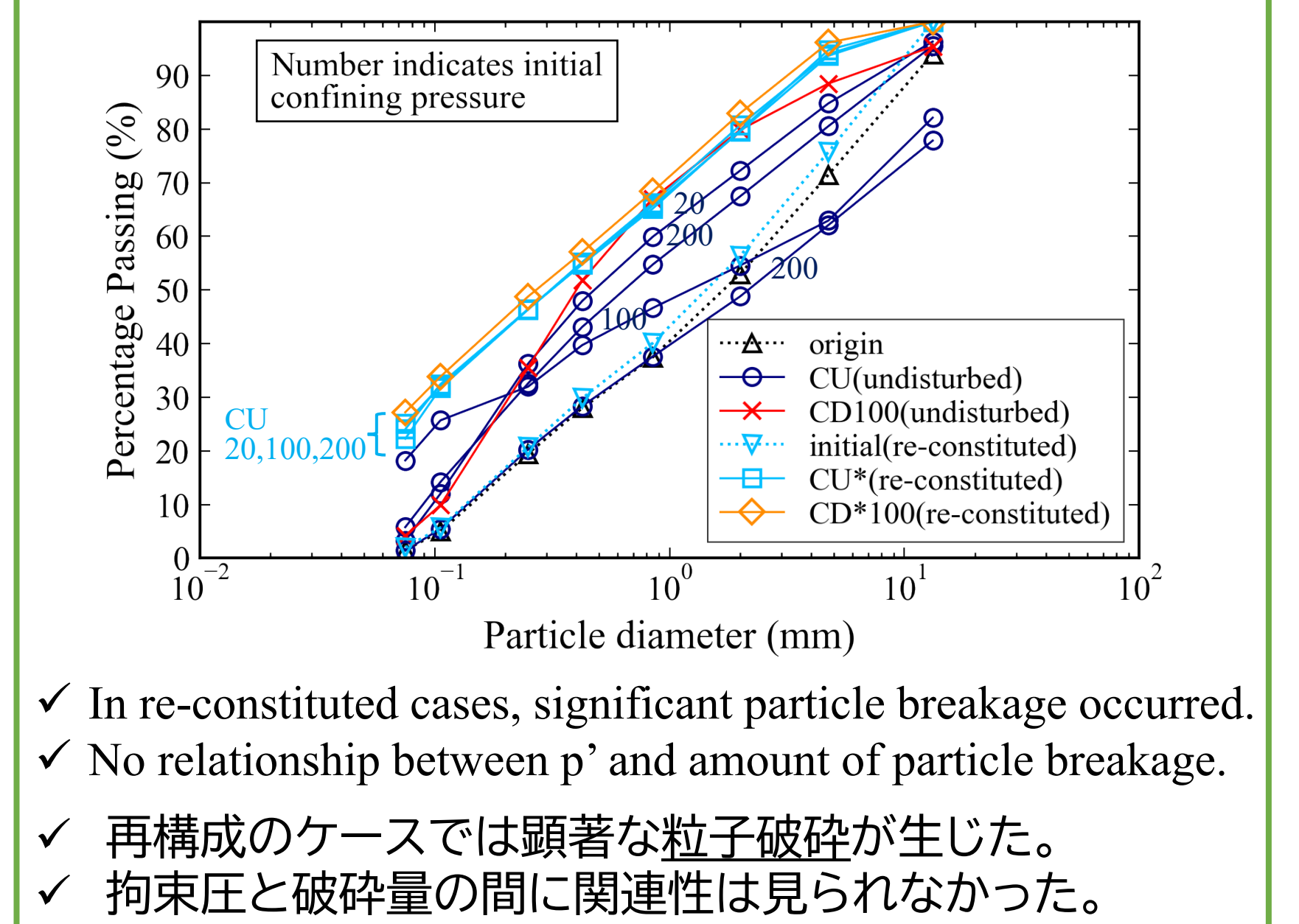
2. Preparation of undisturbed / re-constituted specimens 不攪乱・再構成供試体の作成



3. Results of triaxial compression test 三軸圧縮試験の結果



4. Particle size distribution 試験前後の粒度分布



5. Conclusions まとめ

- ✓ In all cases except CD100, steady-state was reached.
- ✓ CD100を除く全ケースで限界状態に至った。
- ✓ Undisturbed samples retained their initial structure during consolidation compared to re-constituted samples, and those with greater confining pressure showed stronger contractancy during shearing.
- ✓ 不攪乱試料では、再構成試料よりも圧密時に初期構造が保持され、拘束圧が大きいものほどせん断時に強いコントラクタンシーが見られた。
- ✓ In re-constituted cases, significant particle breakage occurred. No notable relationship was observed between confining pressure and the amount of particle breakage.
- ✓ 再構成のケースでは著しい粒子破碎が生じた。破碎量と拘束圧に顕著な関係性は確認できなかった。

