Source of the 1771 Yaeyama tsunami

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The giant 1771 Yaeyama tsunami occurred in the southwestern part of the Ryukyu Arc that does not show strong interplate coupling. Recurrence interval of tsunami has been estimated to be 500 to 1000 years. Previous models of the tsunami have attributed to thrusting on a shallow plate boundary or active faulting plus a landslide on the overriding plate, however they have been controversial. We found evidence of large-scale collapse on the accretionary prism along the trench based on detailed bathymetric and seismic data, and a slide on the prism can be the source of the tsunami. We will show that the landslide model is consistent with geological and geophysical observations. We also propose unique tectonic setting that the prism was cut by strike-skip faulting due to slip-partioning along the oblique subduction zone.

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