Collaboration between: U. of Texas Institute for Geophysics; U. of Hawaii, SOEST; U. of California, Santa Cruz, Earth Sciences; U. of Tokyo, Ocean Research Institute; Japan Marine Science and Technology Center (JAMSTEC).

Collected largest academic 3D seismic reflection survey.

First “true 3D” processing, including 3D prestack migration.

Defined large-scale structural subdivisions of the Nankai accretionary prism.

Detailed the initiation of thrust faulting seaward of the prism toe.

Quantified dewatering of subducting Shikoku Basin sediment section.

Documented variability of frontal thrust faults.

Mapped décollement amplitude across the aseismic-to-seismic transition.

Explored implications of prism geometry in the aseismic to seismic transition.

3D image led to major modification of drilling plans for Legs 190 and 196 and served as the basis for interpretation of resulting drilling data.

International cooperation:

- Major financial contribution from Japan for acquisition costs.
- Participation by Japanese scientists in planning, acquisition, processing and interpretation.
- Japanese colleagues conducted several cruises to our 3D seismic area, including a 100-OBS refraction experiment, two OBS deployments for mapping microseismicity, closely-spaced heat flow measurements and submersible diving.
Figure 1. Interpretation of 3D seismic volume showing structural relations in the area where the décollement steps down to near the top of oceanic crust. This coincides with major out-of-sequence thrusting.