

## Tectono-stratigraphic evolution of the Kumano Basin interpreted from 2D reflection seismic survey

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Tectono-stratigraphic evolution of the southern Kumano Basin was interpreted on the basis of the 2D multi-channel reflection seismic survey. Analysed data were acquired by Center for Deep Earth Exploration (CDEX) using R/V Polar Princess with a 6 km streamer and a 4,240 cubic inch airgun during 30 January -17 February 2003, covering 24 km (NE-SW direction, trough-parallel) x 40 km (NW-SE direction, trough-normal) area. Normal line spacing is 2 km and the total length of the survey line is 1,497 km. Acquired data were processed with conventional methods including parabolic radon filter, DMO and post-stack time migration.

Overall structure of the surveyed area of the Kumano Basin is characterised by an asymmetric trough with NE-SW directed axis. The interior of the basin can be divided by major unconformities into six units: Unit A to F. The lowermost unit A has a chaotic reflective feature. This unit is considered to be a part of old accreted sedimentary body. The overlying Unit B is characterised by continuous reflectors, however their lateral extension is less than 10 km. Unit C, the overlying unit is characterised by a low-amplitude but continuous reflectors. This unit widely distributes in the survey area, which extends seaward to the outer-arc high. We observed their distribution is a landward fanning with a pivot at outer-rise in the trough-normal survey lines. Unit D to F, unconformably overlying the Unit C, show landward dipping which is more shelving to the upper beds. This may imply an elevation history of the outer-arc high through deposition of the Kumano Basin. In the upper three units (Unit D to F), rhythmic repetition of high-amplitude, continuous reflectors are well recognised, which can be interpreted as sandstone / mudstone alternations including turbidite.

Two deep drilling sites are planned in the Kumano Basin as a part of NanTroSEIZE project in the Integrated Ocean Drilling Program (IODP). Biostratigraphy with drilled cores will provide time constraints for the tectono-stratigraphic evolution of the Kumano Basin and outer-arc high, which is strongly related to the activity of the mega-splay fault branched from the seismogenic zone.