

Distribution of radioactive iodine-129 in pore waters from the Nankai Trough

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We have applied geochronological technique of radioactive iodine-129 for the determination of potential age of pore waters in the Nankai Trough (NanTroSEIZE Expeditions 315 and 316). Iodine concentrations progressively increase downward, indicating a strong upward flux of deep fluids enriched in iodine liberated during organic matter degradation. Concentrations of iodine-129 provided potential fluid ages of ~30 Ma throughout the accreted and overlying forearc sediments at the landward site (C0002). On the other hand, iodine-129 ages are close to ~30 Ma only in the accretionary prism at the seaward site (C0001), those in the forearc sediments are significantly younger. This age gap corresponds with the porosity drop at the lithologic boundary occurring only at the seaward site, deep fluids migrate preferentially along the boundary.