# Distribution of neodymium isotopes along the GEOTRACES Eastern Pacific Zonal Transect

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The GEOTRACES Eastern Pacific Zonal Transect (EPZT, GP16) provides a great opportunity to understand sources, sinks and cycling of neodymium (Nd) in the ocean as well as how well Nd isotopes behave as a conservative water mass tracer because the EPZT crosses different environments, including a continental margin, an oxygen minimum zone, an oceanic ridge, and open ocean. We report the distribution of dissolved Nd isotopes from 21 stations in the EPZT. Most of the surface samples (0 to ~10 m) show εNd values between -2 and -1, reflecting terrigeneous contributions from South America. εNd values of the shallow samples from ~10 to ~500 m range between -4 and -1, consistant with εNd values of Equatorial Subsurface Water, Eastern South Pacific Intermediate Water, and South Pacific Central Water. West of the East Pacific Rise (EPR), below ~500 m, εNd values gradually decrease with depth, indicating contributions from Antactic Intermediate Water (εNd = -7) and Circumpoloar Deep Water (εNd = -8). East of the EPR, seawater shows higher εNd values compared to west of the EPR, especially for stations from 84°W to the Peru margin between ~500 and ~2000 m water depth. The higher εNd values close to the Peru margin could be attributed to contributions to the seawater from marginal sediments. Below ~2000 m, εNd values on the eastern side of the EPR range between -4 and -3, indicating dominance of Pacific Deep Water (εNd = -4). These results indicate that Nd isotopes in the open ocean largely behaves as a conservative water mass tracer, while deviations from conservative behavior are evident close to continental margins.