

## Tectonic evolution of central and southern Mariana Trough

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We present detail tectonic history of the central Mariana Trough at 18N and of the southern Marina Trough at 13N, using bathymetry, magnetic and gravity data from three surveys (YK9911, YK96-13, and KH92-1 cruises). The central Mariana Trough started seafloor spreading at about 6 Ma with its half-spreading rate of 22 mm/year and changed the rates and its spreading directions at about 3 Ma. The southern Marina Trough started seafloor spreading at 3-4 Ma with higher spreading rate, resulting in the EPR type axial relief in the morphology. Common features are relative movements of the spreading axes toward the trench involving the ridge jumps to the east. These features are probably a key to understand causes of back-arc spreading.