



CICLO DI SEMINARI

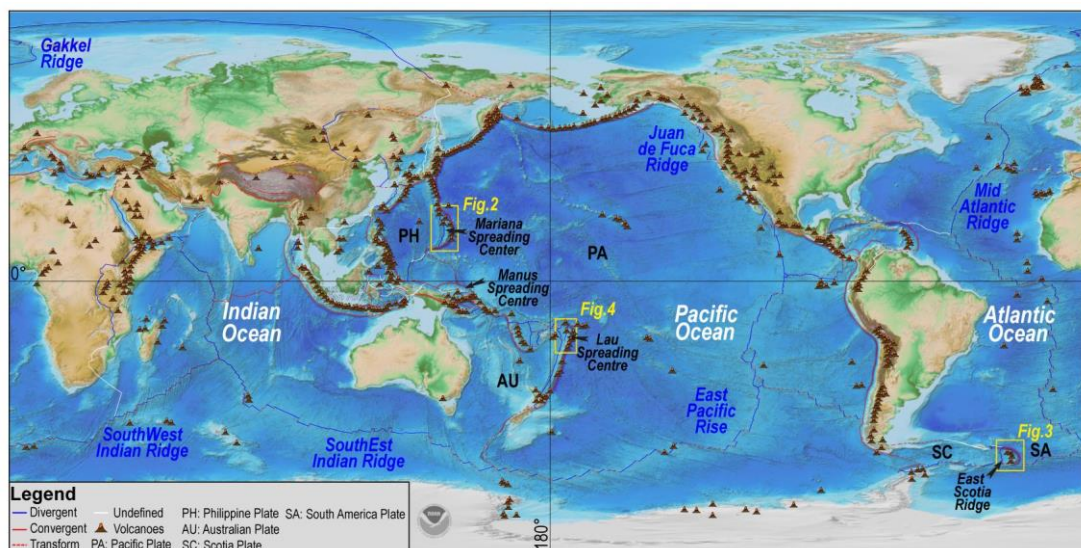
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MORPHOLOGY AND SPREADING RATE OF OCEANIC BACK-ARC SPREADING CENTERS: THE CASE OF THE NORTHERN LAU BASIN

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According to the theory of plate tectonics, most of the oceanic crust originates along the Mid-Ocean Ridges (MORs), the boundaries between two different lithospheric plates move apart. New melt rises below the axis of the MORs through a process of adiabatic decompression of the mantle, coming into contact with sea water. It cools, solidifies, acquires the magnetization of the earth's magnetic field and begins to migrate laterally and symmetrically on both sides of the ridge, following the divergent relative movement of lithospheric plates.

Seafloor spreading can originate also along convergent plate boundaries, where the regional extensional tectonics in the back-arc basins creates progressively the thinning of the crust, the formation of a basin intruded by magmatic bodies, and a system of segments of spreading. However, processes of crustal accretion in back-arc regions are more complicated within respect those of MORs, because mechanisms driving the extension in the upper plate are several and linked to the different geological and geodynamic evolution of a single subduction system.