

2008年度
第1回

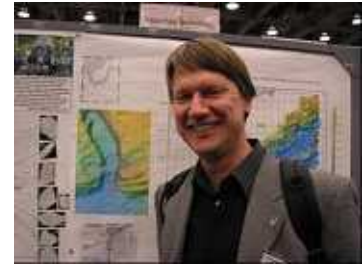
地質学セミナー

日時 4月30日(水) 17:00-
場所 総合研究棟B112



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Martin Meschede博士はNb-Y-Zrを使った島弧火成活動の地球化学的判別(Meschede diagram)の研究における第一人者として、また海嶺や沈み込み帯のテクトニクスの研究者として知られており、特に東太平洋やコスタリカmarginを研究対象にしています。



1. Complex plate puzzle in the Eastern Pacific: the multistage evolution of the Cocos-Nazca spreading center

The Eastern Pacific basin which belongs to the Cocos and Nazca plates is characterized by a very complex plate tectonic puzzle of different blocks of oceanic crust and submarine ridges. The magnetic anomaly pattern indicates a three-stage development of the Cocos-Nazca spreading center (CNS-1 through -3) in response to changing spreading directions of the East Pacific Rise. Paleogeographic restorations for the oceanic crust formed by the presently active CNS-3 and its two precursors were performed. The model also explains the history and ages of the submarine aseismic ridges in the Eastern Pacific Basin, the Carnegie, Coiba, Cocos, and Malpelo ridges. The bipartition of the Carnegie ridge reflects the shift from the precursor CNS-2 to the presently active CNS-3. The Cocos ridge is mainly composed of products from the Galapagos hotspot although it is today located north of the active CNS-3. The Malpelo ridge is a product of a second hotspot center about 600 km NE of the Galapagos hot spot, whereas the Coiba ridge formed at the Galapagos hotspot itself. The geometric relationship of the Cocos and Carnegie ridges indicates symmetric rather than asymmetric spreading and a constant northward shift of the presently active spreading axis of the CNS-3.

2. Subduction erosion at the Costa Rican convergent margin: a multidisciplinary study

The Costa Rican convergent margin is dominated by the process of subduction erosion rather than accretion. Intense investigations offshore (ODP drilling, various R/V Sonne cruises) and on land and the close neighborhood of different tectonic settings result in a well-established tectonic model which can be taken as a textbook example for the process of subduction erosion. Sedimentary and tectonic structures, bathymetric indications from paleontological studies, interpretations of seismic lines, and mapping of the seafloor topography indicate subsidence and extension of the forearc wedge. Due to the indentation of the Cocos Ridge in southern Costa Rica, the melange Plange zone along the boundary of the subsiding and overriding plates, the so-called subduction channel, has been uplifted and is today exposed at the Osa peninsula. This gives the opportunity to study products of subduction erosion which under normal circumstances are not accessible.

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次回のセミナーのご案内

5月7日(水) 17:00

総合研究棟 B110

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