UNIVERSITA' DEGLI STUDI DI PADOVA
DIPARTIMENTO DI GEOSCIENZE
Via Gradenigo 6
35131 Padova
www.geoscienze.unipd.it

DIPARTIMENTO DI GEOSCIENZE

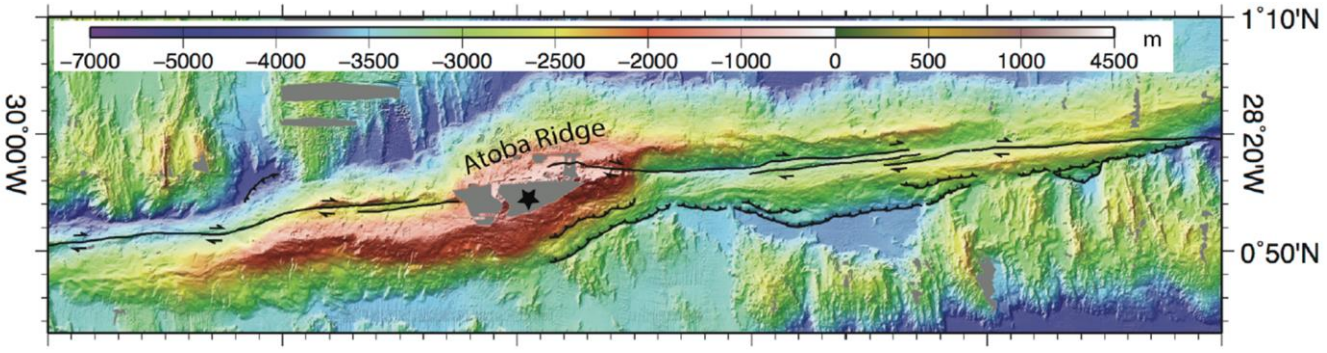
Seminario

Evolution of a slow-slipping multisegmented transform: the Saint Paul system, Equatorial Atlantic

Martedì, 16 aprile – ore 16:30
Aula Arduino

Relatore: **Dr. Marcia Maia**
Laboratoire Domaines Océaniques
Institut Universitaire Européen de la Mer (IUEM), Plouzané, France

Abstract
Large offset transform faults may deform due to changes in plate motions and to more local processes. The St. Paul transform, in the Equatorial Atlantic, is one of the few slow-slipping multi-segmented transform systems and has had a complex tectono-magmatic evolution since 48 Ma. The system is formed by three small intra-transform spreading segments offset by large to intermediate transform faults. The tectono-magmatic evolution of these segments is highly variable, from a magmatic system in the north to a tectonic dominated spreading style in the south, with mantle being currently exhumed in the central segment. Along the northern transform boundary of the system, a large body of ultramafic rocks is presently being uplifted under tectonic deformation.



The origin of this large uplifted portion of the mantle is linked to local compressive stresses along the transform fault. This large push-up ridge is formed by deformed mantle located in the center of a positive flower structure, where large portions of mylonitized mantle are uplifted. The southern flank of the ridge is marked by seismically active thrust faults where earthquakes display compressive mechanisms. The transpressive stress field also affects a large portion of the north intra-transform ridge segment. The present morphology of the St. Paul transform system is due to a complex interplay between far field extensive stresses, inducing the progressive opening of this slow-slipping leaky transform and local compressive stresses that relate to the upper mantle composition and mid-oceanic ridge dynamics.

Proponente: **Christine Meyzen**