

Brazil

Brazil has a new member of the GEOTRACES SSC: Dr. Angela Wagner of the Departamento de Química, Pontifícia Universidade Católica do Rio de Janeiro. She replaces Dr. Luis Felipe Niencheski of the Fundação Universidade Federal do Rio Grande, a founding member of the SSC.

Guarani Aquifer and coastal zone

The Guaraní Aquifer, located beneath the surface of Argentina, Brazil, Paraguay and Uruguay is one of the world's largest aquifer systems and is an important source of fresh water.

Brazilian scientists are studying the interference of the Guarani Aquifer in the coastal zone through a project entitled “Chemical processes and groundwater discharge associated to coastal continental margins” sponsored by CNPq. We have realized observations of naturally occurring geochemical tracers (^{222}Rn , ^{223}Ra , ^{224}Ra) in the coastal waters as proxies of Submarine Groundwater Discharge. More than 600 km of coast line in Southern Brazil (close to the Uruguayan borders) was investigated. Coastal seawater and shallow beach groundwater (<4m deep) were sampled in 2009.

A cooperative program between Brazil and Argentina is entitled “Connections and interactions between surface water and groundwater in the region of the Middle Paraná River System, Lagoon Patos-Mirim and Costa Patagonia: isotopic evaluation”. Participating scientists include Luis Felipe Hax Niencheski (Brazil) as well as Jose Luis Esteves (Centro Nacional Patagónico) and Pedro Depetris (Universidad Nacional de Cordoba) from Argentina.

Ocean

The first detailed investigation carried out by Brazilian scientists on trace metal concentration (Fe, Al, Ba, B, Cu, Cr, Pb, Cd, Zn, Ni, V, Mn, Hg and As) in ocean surface waters and sediments is under way in the Campos Basin, where the largest offshore petroleum reservoirs are found in Brazil. Two seasonal sampling campaigns were completed in 108 stations distributed in transects extending (09 transects; from 25 m to 3000 m depth) from the continental shelf to the continental slope and including mature as well as immature canyons. The entire research program addresses, in addition, the origin of the organic matter in sediments by using molecular markers (hydrocarbons, hopanes, steranes, sterols, fatty alcohols and acids, lignin, amino-acids, black carbon) as well as stable isotope signature. The leading scientists are: Angela Wagener, José Marcus Godoy, Reinaldo Campos (Pontifícia Universidade Católica do Rio de Janeiro), Renato Carreira (Universidade Estadual do Rio de Janeiro) and Carlos Rezende (Universidade Estadual Norte Fluminense). The overall goal is to provide baseline information but also to understand the influence of river discharge, of the Cabo Frio upwelling and of different water masses on the chemical, geological and biological properties.