UNIVERSITY OF MACAU

FACULTY OF SCIENCE AND TECHNOLOGY

DEPARTMENT of

CIVIL AND ENVIRONMENTAL ENGINEERING

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" Geology and geodynamic evolution of Macau "

by

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Date: **11/03/2016 (FRIDAY)**

Time: **3:30PM – 5:30PM**

Venue: **E11 – 1035**

Abstract

More than 95% of outcropping rocks of Macau have magmatic origins generated during Mesozoic ages. In the Indosinian (Triassic) and Yanshanian orogenies (Jurasic-Cretaceous), SE China region (Cathasya block), where Macao is localized, was affected by a widespread granitic plutonism generated due to the paleo-Pacific plate subduction beneath the Euroasia plate, overprinting most of previous geological events in the South China Fold Belt (SCFB). Granitic rocks outcropping in Macao seem to have been emplaced at least at two distinct periods. Granites from Macao and Taipa date from middle-late Jurassic while some samples from Coloane were estimated to be younger (Cretaceous). In general, granitic rocks are very fractured orogenic rocks, frequently cut by quartz veins and by fine-grained granite dykes, and also aplitic to pegmatite dykes. Volcanic rocks are not present as in the neighbouring regions but some andesitic dykes were identified. Petrological and geochemical analyses suggest that granitic rocks have been emplaced during the subduction of the paleo-Pacific plate beneath the Euroasia plate and andesitic dykes may explain changes in composition and style of emplacement through time, consistent with a transition from a subduction-related to an extension-related tectonic regime.

During the 1990's a detailed cartography of the rocks of Macao was developed, which allowed pointed out some important geological details, although some questions still remain. We are currently coordinating a research project that will develop a detailed digital cartographic map of the igneous rocks of Macao, useful for professionals from different areas. Ultimately, the project aims to obtain, through petrological and geochemical analyses of local rocks, a deeper understanding of the source and processes of magma genesis in Macao and contribute to a deeper understanding of the South China tectono-magmatic evolution.

Biography

Á gata Sofia C.M. Alveirinho Dias is an Associate Professor and Researcher in the Institute of Science and Environment Research Center (ISE) from the USJ. Is also a researcher from the Inst. Dom Luis IDL / Associated Lab, Portugal.

After her graduation in Geology, she took a Master in Dynamic Geology and afterwards a PhD in Geology, followed by two Post-Doctoral research activities. Since she finished her graduation (1996), she has been working in Geology, both in her main research area, where she did work on cartography, petrology, metallogeny and geochemistry, and in

more applied areas, like environmental projects. Her research has been supported by R&D projects, most of them in collaboration with international research centers and Universities. She initiated her investigation on the study of petrology and geochemistry of the deep-sea floor, participating in numerous research cruises, from the Atlantic to the Arctic Sea. Currently she is still working in deep-sea research through international collaborations but is mostly focused on the study of the cartography and petrology of Macao, being PI of a FDCT research project in collaboration with the University of Lisbon, in Portugal, and the Geochemical Institute of Guangzhou of the Chinese Academy of Sciences.

She also has 20 years of experience in teaching at graduate and post-graduate levels at different Universities, such as ULHT (Lusophone University of Humanities and Technologies, Lisbon) and FCUL (Faculty of Sciences, University of Lisbon). In 2011 she moved to Macau to the University of Saint Joseph.

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