New phase of the integrated geo-science on the Lau Basin - Havre Trough active back-arc system

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The Lau Basin - Tonga Arc and Havre Trough - Kermadec Arc region is characterised by 'the fastest of the planet' (240 mm/yr), an oceanic ridge subduction (Louisville Ridge), an active arc volcanism (Tofua Arc), a rifting and a very fast back-arc spreading (159 mm/yr) and active hydrothermal venting (Valu Fa Ridge). This suggests that the region may be considered as a natural observatory to study the difference in the spreading rate at the back-arc basins. The most up-to-date subject is to test the 'subduction factory' hypothesis in many cases in the trench - arc - backarc areas including slow and fast spreading back-arc systems. In additinon to the research facilities such as scientific research vessels and research submersibles/ROV's, inter-disciplinary studies such as bottom observation (including seafloor ranging) and fluid sampling for detailed hydro-geology and geochemistry under the leading international programmes such as InterMARGINS and IODP should be proposed for the new phase of the study on the tectonically active region.