

Extensive hydrothermal activity revealed by multi-tracer survey in the Wallis and Futuna region (SW Pacific)

C. Konn, E. Fourré, P. Jean-Baptiste, J.P. Donval, V. Guyader, D. Birot, A.S. Alix, A. Gaillot, F. Perez, A. Dapoigny, E. Pelleter, J.A. Resing, J.L. Charlou, Y. Fouquet



PII: S0967-0637(15)30200-4
DOI: <http://dx.doi.org/10.1016/j.dsr.2016.07.012>
Reference: DSRI2666

To appear in: *Deep-Sea Research Part I*

Received date: 10 December 2015

Revised date: 6 July 2016

Accepted date: 25 July 2016

Cite this article as: C. Konn, E. Fourré, P. Jean-Baptiste, J.P. Donval, V. Guyader, D. Birot, A.S. Alix, A. Gaillot, F. Perez, A. Dapoigny, E. Pelleter, J.A. Resing, J.L. Charlou and Y. Fouquet, Extensive hydrothermal activity revealed by multi-tracer survey in the Wallis and Futuna region (SW Pacific), *Deep-Sea Research Part I*, <http://dx.doi.org/10.1016/j.dsr.2016.07.012>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

**Extensive hydrothermal activity revealed by multi-tracer survey in the Wallis and
Futuna region (SW Pacific)**

C.Konn^{1*}, E. Fourré³, P. Jean-Baptiste³, J.P. Donval¹, V. Guyader¹, D. Birot¹, A.S. Alix¹, A. Gaillot², F. Perez³, A. Dapoigny³, E. Pelleter¹, J.A. Resing⁴, J.L. Charlou¹, Y. Fouquet¹,
scientific parties

¹Ifremer, Laboratoire des Cycles Géochimiques et ressources, CS10070, F-29280 Plouzané, France

²Ifremer, Service Cartographie Traitement de Données et Instrumentation, CS10070, F-29280 Plouzané, France

³LSCE, UMR 8212 CEA-CNRS-UVSQ, F-91191 Gif-sur-Yvette, France

⁴Joint Institute for the Study of the Atmosphere and the Ocean, University of Washington and NOAA-PMEL, 7600 Sand Point Way NE, Seattle, Washington 98115, USA

*Correspondance: cecile.konn@ifremer.fr

Abstract

The study area is close to the Wallis and Futuna Islands in the French EEZ. It exists on the western boundary of the fastest tectonic area in the world at the junction of the Lau and North-Fiji basins. At this place, the unstable back-arc accommodates the plate motion in three ways: (i) the north Fiji transform fault, (ii) numerous unstable spreading ridges, and (iii) large areas of recent volcanic activity. This instability creates bountiful opportunity for hydrothermal discharge to occur. Based on geochemical (CH₄, TDM, ³He) and geophysical (nephelometry) tracer surveys: (1) no hydrothermal activity could be found on the Futuna Spreading Center (FSC) which sets the western limit of hydrothermal activity; (2) four distinct hydrothermal active areas were identified: Kulo Lasi Caldera, Amanaki Volcano, Fatu

Download English Version:

<https://daneshyari.com/en/article/6383343>

Download Persian Version:

<https://daneshyari.com/article/6383343>

[Daneshyari.com](https://daneshyari.com)