

Accepted Manuscript

Characterizations of Geothermal Springs along the Moxi Deep Fault in the Western Sichuan Plateau, China

Jihong Qi, Mo Xu, Chengjiao An, Mingliang Wu, Yunhui Zhang, Xiao Li, Qiang Zhang, Guoping Lu

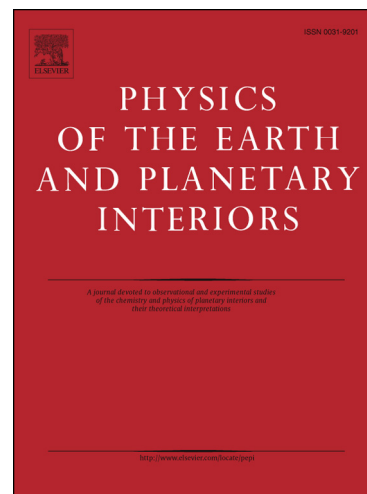
PII: S0031-9201(16)30140-6
DOI: <http://dx.doi.org/10.1016/j.pepi.2017.01.001>
Reference: PEPI 5994

To appear in: *Physics of the Earth and Planetary Interiors*

Received Date: 19 July 2016
Revised Date: 8 January 2017
Accepted Date: 8 January 2017

Please cite this article as: Qi, J., Xu, M., An, C., Wu, M., Zhang, Y., Li, X., Zhang, Q., Lu, G., Characterizations of Geothermal Springs along the Moxi Deep Fault in the Western Sichuan Plateau, China, *Physics of the Earth and Planetary Interiors* (2017), doi: <http://dx.doi.org/10.1016/j.pepi.2017.01.001>

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 proof before it is published in its final 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.



1 Characterizations of Geothermal Springs along the Moxi
2 Deep Fault in the Western Sichuan Plateau, China

3 Jihong Qi¹, Mo Xu*, Chengjiao An¹, Mingliang Wu¹, Yunhui Zhang¹, Xiao Li¹, Qiang Zhang¹,
4 Guoping Lu²

5 1. *State Key Laboratory of Geohazard Prevention and Geoenvironment Protection, Chengdu*
6 *University of Technology, Chengdu 610059, China*

7 2. *School of Environmental Studies, China University of Geosciences, Wuhan 430074, China*

8 *Corresponding author: XM@cdut.edu.cn

9
10 **ABSTRACT:** Abundant geothermal springs occur along the Moxi fault located in western
11 Sichuan Province (the eastern edge of the Qinghai-Tibet plateau), highlighted by geothermal
12 water outflow with an unusually high temperature of 218°C at 21.5 MPa from a 2010-m
13 borehole in Laoyulin, Kangding. Earthquake activity occurs relatively more frequently in the
14 region and is considered to be related to the strong hydrothermal activity. Geothermal waters
15 hosted by a deep fault may provide evidence regarding the deep underground; their aqueous
16 chemistry and isotopic information can indicate the mechanism of thermal springs. Cyclical
17 variations of geothermal water outflows are thought to work under the effect of solid earth
18 tides and can contribute to understanding conditions and processes in underground
19 geo-environments. This paper studies the origin and variations of the geothermal spring group
20 controlled by the Moxi fault and discusses conditions in the deep ground. Flow variation
21 monitoring of a series of parameters was performed to study the geothermal responses to solid
22 tides. Geothermal reservoir temperatures are evaluated with Na-K-Mg data. The abundant
23 sulfite content, dissolved oxygen (DO) and oxidation-reduction potential (ORP) data are
24 discussed to study the oxidation-reduction states. Strontium isotopes are used to trace the
25 water source. The results demonstrate that geothermal water could flow quickly through the

Download English Version:

<https://daneshyari.com/en/article/5787352>

Download Persian Version:

<https://daneshyari.com/article/5787352>

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