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Origin of saline springs in Yanjing, Tibet: Hydrochemical and isotopic characteristics

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# 1 **Origin of saline springs in Yanjing, Tibet: Hydrochemical** 2 **and isotopic characteristics**

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11 **Abstract:** The Yanjing region of Tibet is famous for its saline springs and salt  
12 deposits. It is located between the Qiangtang and Lanping-Simao basins that also have  
13 saline springs and salt-bearing strata. The hydrochemical and stable water and C-13  
14 isotopes of saline springs, hot springs, surface waters and rocks from Yanjing are  
15 reported and compared with data from those basins. Results indicate that 1) the saline  
16 springs are high TDS, *Na-Cl* type waters and brines with unusually high K contents  
17 that indicate interaction with evaporite minerals; 2) for the saline springs from  
18 Yanjing, the circulation depth is moderate, 3 to 4 km, and the Late-Triassic strata ( $T_3b$ )  
19 are considered as the salt bearing strata and the aquifer; 3) the hot springs are of two  
20 distinct geochemical types, *Na-Ca-HCO<sub>3</sub>* type waters with higher temperature, and  
21 *Na-Ca-SO<sub>4</sub>* waters with somewhat higher TDS content; and 4) all waters are of  
22 meteoric origin or have a large meteoric component. Furthermore, the lithofacies'  
23 evolution of the salt-bearing belt from Lanping-Simao to Qiangtang, and the affinities

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