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

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Abstract: The Yanjing region of Tibet is famous for its saline springs and salt deposits. It is located between the Qiangtang and Lanping-Simao basins that also have saline springs and salt-bearing strata. The hydrochemical and stable water and C-13 isotopes of saline springs, hot springs, surface waters and rocks from Yanjing are reported and compared with data from those basins. Results indicate that 1) the saline springs are high TDS, *Na-Cl* type waters and brines with unusually high K contents that indicate interaction with evaporite minerals; 2) for the saline springs from Yanjing, the circulation depth is moderate, 3 to 4 km, and the Late-Triassic strata (T_3b) are considered as the salt bearing strata and the aquifer; 3) the hot springs are of two distinct geochemical types, *Na·Ca-HCO_3* type waters with higher temperature, and *Na·Ca-SO_4* waters with somewhat higher TDS content; and 4) all waters are of meteoric origin or have a large meteoric component. Furthermore, the lithofacies' evolution of the salt-bearing belt from Lanping-Simao to Qiangtang, and the affinities