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The Basement Structure and its Genetic Mechanism of Sichuan Basin, China

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Sichuan basin is a rhombus basin which is surrounded by Micang mountain, Qiyao mountain, Dalou mountain, Daliang mountain and Longmen mountain who locate in the east of Qingzang plateau. Sichuan basin is a huge oil and gas basin which locate in the north-west of Yangze quasi platform, the strata of Sichuan basin can be divided into two parts, one is Marine carbonate platform sedimentary and another one is Continental clastic sedimentary. These years, Marine carbonate exploration in our country has entered into a critical period company with deeply geological cognitions and modern exploration technology, so Sichuan basin is a key point of marine oil and gas exploration in the south of China. From Sinian to middle Triassic, the main sedimentation in Sichuan basin is a series marine carbonate deposit which constituted a perfect source-reservoir-seal combination and caused a good petroleum geological condition. From the current results of explorations and researches, we can learn that the key carbonate gas fields are distributed in the Leshan-Longnvsi ancient uplift in Sichuan basin, and these gas fields were controlled by the ancient uplift, furthermore, the formation and structures of ancient uplift are controlled by the basement of Sichuan basin.

For the understanding of the s basement of chuan basin now stop work before in the 1990s. From the guiding of Basin tectonic dynamics, the newest preferences of geology, geophysical and drilling data, we deeply researched and analysis the distribution of basement faults and the facies of basement rocks, so we learned that the basement of Sichuan basin developed a

chessboard formation faults system which were oriented in the NE and NW and constituted the hard base structure. Meanwhile we also found that the basement of Sichuan basin can be divided into bedrock uplift belt in the middle of Sichuan basin, basement depression belt in the west of Sichuan basin and in the south-east of Sichuan basin. From the whole earth's structure evolution history, the structure characteristics like the basement of Sichuan basin are usually related with activity of supper plumes. Because the active of supper plumes in Nanhua period, Sichuan basin was stretched to NN direction (the main direction) and EW direction which caused land mass differences rise and fall under the background of tension tectonic dynamics.

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