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Formation and evolution of the Jurassic prototype Basin in Qaidam block and adjacent areas

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Qaidam Basin, located at China's western Qinghai-Tibet Plateau, is a superimposed hydrocarbon basin in Mesozoic-Cenozoic, its Jurassic is an important oil and gas reservoirs. Jurassic is widely distributed in northwest China's continental basin, in order to produce a wealth of coal and oil is known. Jurassic prototype basin in Qaidam block and adjacent areas, because of its special structure and geographical environment, is different from other regions in northwest China. Based on the three types of basin boundary (steep type, gentle type and fault type), the Jurassic prototype basin is mainly located in the mountain-basin conjunction of the southern edge of the South Qilian structural belt and the northern margin of the East Kunlun tectonic belt (Fig.1). According to the rock composition, cyclic sequence and layer stacking, etc., the filling and evolution of Jurassic prototype basin experienced the river - delta - deep lake stage, braided river - lake marsh - Delta stage, meandering river - shallow lake stage. The formation and evolution of the Jurassic prototype basin related to gravitational collapse and thermal subsidence after the collision of Bayankala old-Tethys oceanic plate and the Eurasian plate. Its development is controlled by the northern margin of the Qaidam South belt and East Kunlun tectonic belt. Its formation and evolution had undergone three stages: early Jurassic rift subsidence - deep depression, middle Jurassic thermal subsidence - great depression, and late Jurassic sedimentary contraction - red basin. Thus, the main hydrocarbon source rock was early - middle Jurassic, and the main reservoir in the middle - late Jurassic. This research was supported financially by the National Major Scientific and Technological Research Projects 2011ZX05003.

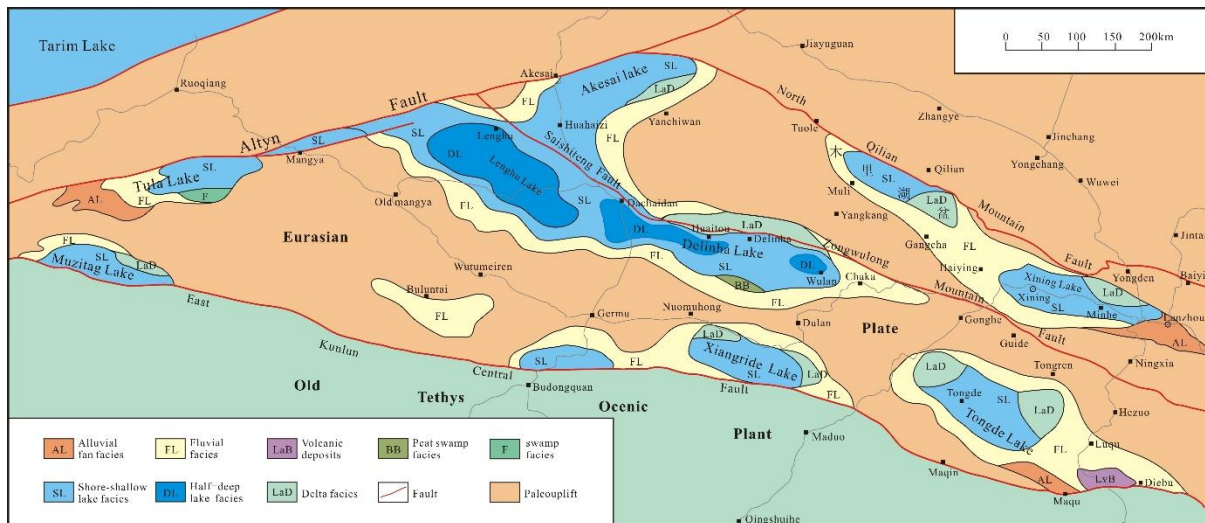


Figure 1: The distribution map of the Jurassic prototype basin in Qaidam block and adjacent areas

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