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盆山结构与油气分布——以四川盆地为例

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摘要：

根据四川盆地与周缘造山带地貌学、深浅部结构构造及动力学机制等, 其盆山结构可分为板缘(龙门山、米仓山和大巴山)突变型和板内(齐岳山、大娄山和大凉山)渐变型两类。板缘突变型盆山结构具有显著深部结构差异性,浅部构造具典型冲断带(山)和前陆盆地(盆)二元结构,其盆山耦合关系主要受控于深部结构的差异性和造山带的形成演化过程,现今山盆地貌反差大,地形坡度陡,盆山边界明晰。板内渐变型盆山结构, 则深部结构特征相似,浅部构造具挤压-坳陷结构、不发育大规模冲断推覆,现今山盆地貌反差小、盆山边界不清, 盆山为渐变过渡关系,其盆山耦合关系主要受控于邻区(盆外)的构造变形和盆内沉积盖层中多层次滑脱作用。不同盆山结构主要通过对现今四川盆地保存条件的影响而控制现今油气分布。四川盆地现今(残存)大中型油气藏和天然气探明储量的大部分主要分布于突变型盆山结构区,尤其是秦岭构造变形控制域。

英文摘要：

Based on geomorphology, structure, texture and evolution, the texture of sedimentary basin-orogenic belt system in Sichuan basin and its peripheral orogenic zones could be classified into two types, which are linearly abrupt margin-plate systems and diffusely gradual interior-plate systems. The linearly abrupt margin-plate systems include Sichuan basin and its surrounding Mount Longmen, Mount Micang and Mount Daba, which are not only the western and northern marginal areas of Sichuan basin, but also the western margin of Yangtze plate in south China. The systems possess clearly different lithospheric textures, abrupt boundaries and great contrast in today’s geomorphology between the basin and mountains with typical fold-thrust belts and foreland basins. The formation and evolution of the margin-plate systems is controlled by the differences of lithospheric textures between the basin and the mountains and evolutionary process of the surrounding mountains. The diffusely gradual interior-plate systems are composed of Sichuan basin and its adjacent Mount Qiyue, Mount Dalou and Mount Daliang, which are the eastern and southern marginal areas of Sichuan basin, and located within the Yangtze plate. There are the similar lithospheric texture and gradual boundaries between the basin and the adjacent mountains without foreland basins and large-scale fold-thrust belts. The formation and evolution of the interior-plate system is made by the tectonic deformation outside the basin and multi-layer detachment within the sedimentary cover of the basin. The evolutionary process of the basin and orogen systems has a great control on today’s oil/gas distribution chiefly through the effect on petroleum preserving conditions in Sichuan basin. Today’s medium-large scale gas accumulations and most of the natural gas proved reserves in Sichuan basin were mainly distributed in the areas influenced by the linearly abrupt margin-plate systems, especially those under the control of Qinling Orogenic zone.

关键词：盆山结构 盆山耦合 油气分布 四川盆地

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