

沉积盆地构造热演化研究进展：回顾与展望

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摘要 构造热演化模拟是研究沉积盆地的重要手段之一,其模型依赖于沉积盆地的成因机制.裂谷盆地构造热演化的定量模型在描述盆地沉降和热流演化方面取得了极大的成功,实现了构造和热的完美结合.而前陆盆地的定量模型更多关注的是构造沉降,在构造与热的结合方面尚不够完善.关于克拉通盆地目前还没有很成熟的定量模型,构造热演化研究程度远远低于裂谷盆地和前陆盆地.随着我国陆域海相沉积盆地油气勘探的突破,对海相沉积盆地热体制的研究迫在眉睫.而我国陆域海相沉积盆地,如塔里木和四川盆地,演化历史长且复杂,是古生代海相克拉通与中、新生代前陆盆地组成的叠合盆地.现有的关于沉积盆地构造热演化的单一模式难以适应复杂的构造—热历史.对我国陆域海相大型沉积盆地进行深入全面的动力学分析,发展叠合盆地的构造—热演化模型,建立相应的构造热演化模式及模拟方法技术,将是一项具有开拓意义并极具挑战性的工作.

关键词 [沉积盆地构造\热演化模拟](#)

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Tectono thermal modeling of sedimentary basins: review and outlook

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Abstract Tectono\thermal modeling is one of the key methods to study the sedimentary basins, and the numerical models are dependent strongly on the dynamic mechanism of basin formation. Tectono\thermal modeling has achieved great success in describing the tectonic subsidence and heat flow of rift basins, where tectonic and thermal developments are linked perfectly. The foreland basin modeling is more concerned on tectonic subsidence rather than heat flow. There are still lack of mature models about cratonic basins, which tectono\thermal modeling is far behind from the rift and foreland basins. With the breakthrough of the petroleum exploration in marine\facies basins on land, study on their thermal regime is urgent. The marine\facies basins in China, such as the Tarim and Sichuan Basin, have experienced very long and complicated developments. They are superimposed basins by Paleozoic marine craton and Mesozoic\Cenozoic terrestrial forelands. The existed tectono\thermal models for non\superimposed basins are not applicable. Analyzing systematically the dynamics of these superimposed basins and developing appropriate numerical models for their tectono\thermal development will be a great challenge and possess innovative significance.

Key words

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