

西沙海槽盆地古近系烃源岩预测与早期评价

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中文摘要:西沙海槽盆地是南海北部陆坡深水区的有利油气勘探区域。该盆地古近系发育有始新统、渐新统两套地层。始新统主要发育一套河湖相烃源岩,其干酪根类型可能主要为II型,具备较高的TOC含量,该套地层在中部坳陷厚度较大,具备较大的生烃潜力,是一套潜在的优质烃源岩;渐新统主要发育一套滨、浅海烃源岩,其干酪根类型可能以III型为主,也是盆地主力烃源岩之一。烃源岩成熟演化模拟结果表明,始新统湖相烃源岩以及下渐新统滨海浅海煤系烃源岩基本已经达到成熟或过成熟阶段;上渐新统烃源岩则仅沉积厚度较大的中央局部进入了成熟阶段;中新统烃源岩由于埋深较浅,基本未成熟。

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Prediction and Early-stage Evaluation of Paleogene Hydrocarbon Source Rocks in the Xisha Trough Basin

Abstract:The Xisha trough basin is a favorable oil and gas exploration area on the northern continental slope of the South China Sea. The Paleogene strata in this basin are characterized by the development of Eocene and Oligocene sediments. Eocene strata mainly developed a river-lacustrine facies hydrocarbon depositional system, and the kerogen source rock might be mainly of I and II type, with high TOC content. This horizon is very thick in the central sag, and hence it is the potential high-quality hydrocarbon source rock. Oligocene strata are characterized by offshore and shelf sea sediments, and the kerogen source rock is probably mainly of III type, and hence this horizon is a the mainly hydrocarbon source rocks. The result of maturity and evolution simulation of source rock indicates that the Eocene lake source rock and the lower Oligocene marine source rock already reached the mature or over-mature phase, whereas the upper Oligocene source rock arrived at the mature phase only in part of central sag. Miocene rock was not mature because of very shallow burial.