



Distribution Pattern and Main Factors Controlling Hydrocarbon Accumulation of Global Oil and Gas-rich Deepwater Basins

QU Hongjun^{1,*}, ZHANG Gongcheng^{1,2}, CHEN Shuo¹ and FENG Yangwei³

¹ State Key Laboratory of Continental Dynamics, Department of Geology, Northwest University, Xi'an 710069, Shaanxi, China

² CNOOC Research Institute Company Limited, Beijing 100028, China

³ School of Earth Sciences, East China University of Technology, Nanchang 330013, Jiangxi, China

Citation: Qu et al., 2019. Distribution Pattern and Main Factors Controlling Hydrocarbon Accumulation of Global Oil and Gas-rich Deepwater Basins. *Acta Geologica Sinica* (English Edition), 93(supp.2): 118–119.

Abstract: It is observed from distribution of oil and gas-rich basins as well as summary and analysis of main control factor for hydrocarbon accumulation in global deepwater at oil and gas-rich basins in deepwater in the world shows “one horizontal and two vertical” in distribution patterns (Fig.1), and that “one vertical” of deepwater basin group chiefly distributed in Atlantic Ocean from north to south of deepwater oil rich-basin group in the world is under the influence of fault basin group and that deepwater gas-rich basin group along Neo-tethyan tectonic domain and epicontinental basin group in East Africa shows “one horizontal and one vertical” in distribution, being under the influence of “fault basin group in transitional facies”;

Comparative analysis and research of main factors for hydrocarbon accumulation in main deepwater oil and gas-rich basins in the world in a systemic way show that main control factors for hydrocarbon accumulation in deepwater oil and gas-rich basin in the world can be reduced to following five types: (1) Reservoir under common control of salt structure, passage system and large turbidite fan; (2) Reservoir under control of source control area and large reservoir body; (3) Reservoir under control of source rock and cap rock control area and large delta; (4) Reservoir under control of source and cover control zone and reef flat; (5) Reservoir under control of source heat control zone, passage system and trap.

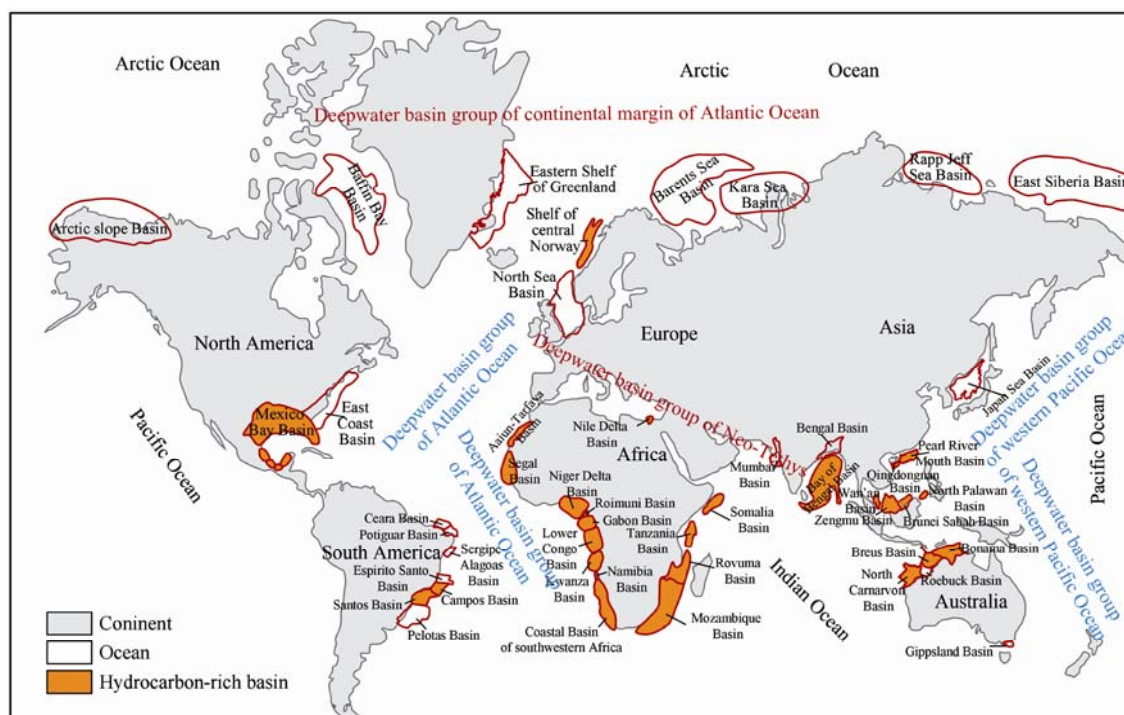


Fig. 1. Distribution profile of the main oil and gas-rich deepwater basins in the world

* Corresponding author. E-mail: hongjun@nwu.edu.cn

Key words: Deepwater basin, Atlantic, Neotethys, East Africa, Main factors controlling hydrocarbon accumulation

Acknowledgments: This research was financially supported by China National Science & Technology Special Project (No. 2016ZX05026-007), The National Key Research Project of China (No. 2016YFC0601003), the National Natural Science Foundation of China (Grants Nos. 41390451, 41172101).

About the first and corresponding author



QU Hongjun, male, born in 1967 in Baoji city, Shaanxi province; PH.D; graduated from Northwest university; He is now a professor in Department of Geology, Northwest University of China. His research interests are sedimentology and petroleum geology. E-mail: hongjun@nwu.edu.cn; phone: 13772500178.