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## **Pyrolysis simulation experiment study on diagenesis and evolution of organic-rich shale**

Dong, C.M.<sup>1</sup>, Luan, G.Q.<sup>1</sup>, Ma, C.F.<sup>1</sup> and Lin, C.Y.<sup>1</sup>

<sup>1</sup> School of Geosciences in China University of Petroleum(East China), Qingdao,China , luanupc@163.com

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It is well known that shale possess abundant hydrocarbon resources and therefore attracted more and more in the recent years. It is the fact that there are only a few researches have been conducted as reservoir instead of source rocks blocks the exploration as well as development of the shale oil and gas. In this study. We look into the diagenetic processes of shale and evolution with heat simulation experiment conduction, mineral transformation observation and fluid component changes tests. Our study shows that:

- 1) A relatively wide organic acid generated window which affect pore fluid features, exists in the period of organic matter thermal evolution.
- 2) Feldspar and calcite show dissolution relay, feldspar dissolution peak is immediately followed by calcite dissolution peak. The study also shows a narrow calcite dissolution window followed by its re-deposition.
- 3) Clay minerals transformation and feldspar dissolution process are coupled with abundant authigenic quartz with chain and cluster structure supporting shale formation.

Shale formation can be seen as a closed system where various diagenesis processes are influencing each other leading to form a complex diagenesis system. It creates more difficulties on diagenesis research.

### *References:*

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