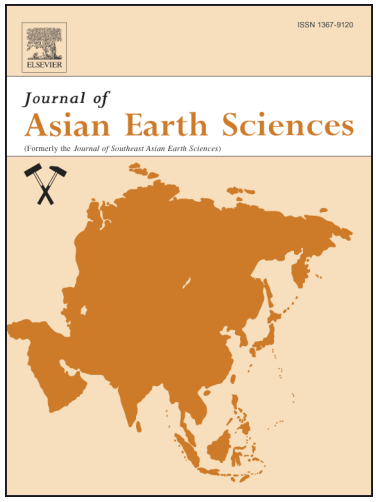

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Lei Wen[a, b], Yue-Jun Li[a], Guang-Ya Zhang[c], Zuo-Ji Tian[c],Geng-Xin Peng[d], Bin Qiu[d], Zhi-Bin Huang[d], Jun-Cheng Luo[d], Qiang Zhang[a, b]

[a] Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing 100029, China

[b] Department of Earth Science, University of Chinese Academy of Sciences, Beijing 100049, China

[c] Research Institute of Petroleum Exploration & Development, PetroChina, Beijing 100083, China

[d] Tarim Oil-field Company, PetroChina, Korla 841000, China

Abstract: The evolution of the Kuqa fold-thrust belt is accompanied with the Cenozoic uplifting of South Tianshan Mountain range. The critical Coubomb wedge theory can be well applied to the structural evolution of the Kuqa fold-thrust belt where the décollement structures are well developed. Following the initial hypotheses of this theory, with the base of the taper wedge (not the sea level) as the reference level, we propose a geometric relationship between the evolution of fold-thrust belt and tectonic uplifting of orogen, and deduce a calculation formula between orogen tectonic uplifting amount (very different from the topographic uplifting) (∂H), fold-thrust belt extending distance (∂S) and crustal shortening amount (∂L): $\partial H=(\partial S-\partial L)*\tan(\alpha+\partial\alpha)+[\tan(\alpha+\partial\alpha)/\tan\alpha-1]*H_0$. In this paper we select two representative seismic profiles across the Kuqa fold-thrust belt to reconstruct the