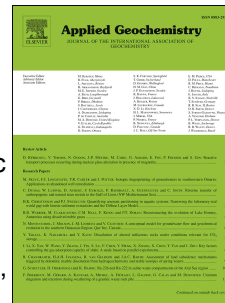


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# Carbon isotope variations in inorganic carbon materials: implications for mud volcanic carbon cycling in the northern Tianshan fold zone, Xinjiang, China

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## ABSTRACT

Carbon isotopes of inorganic carbon-bearing materials (gaseous CO<sub>2</sub>, dissolved inorganic carbon (DIC) and solid carbonates) sampled from four mud volcanoes in the northern Tianshan fold zone were investigated to study the mud volcanic carbon cycling process. The analysed carbon isotopes showed <sup>13</sup>C enriched characteristics, the δ<sup>13</sup>C values of CO<sub>2</sub>, DIC and solid carbonates were in the range of 10.99 to 32.11‰, 17.02 to 36.22‰, and -7.28 to 12.40‰, respectively. The <sup>13</sup>C enrichment of

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