Geophysical Research Abstracts
Vol. 13, EGU2011-1696, 2011
EGU General Assembly 2011

The age of the major δ13Corg and δ34S Hettangian excursions at Kennecott Point (Queen Charlotte Islands, Canada)

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In 2007 and 2009 Williford et al. published very interesting contributions on the variations of the δ13Corg and δ34S at Kennecott Point (Queen Charlotte Islands, Canada), demonstrating the existence of a major positive organic carbon excursion in the Hettangian, concomitant with a major shift of the sulfur isotop values. These excursions were interpreted as Early Hettangian.
The recent discovery of a very large positive δ13Corg excursion in the Angulata zone (Late Hettangian) at New York Canyon (Nevada, USA) led us to revise the data published by Tipper et al (1991) and Longridge et al. (2008) on the detailed stratigraphy at Kennecott Point, and we conclude that the Kennecott excursion was also Late Hettangian, like in Nevada. To reach this conclusion, we re-examined the distribution of the ammonites at Kennecott Point established by Longridge et al. (2008) and plotted the metric stratigraphic position of the chronologically most important ammonite taxa against the stratigraphic sequence studied by Williford et al. (loc.cit.). The result demonstrates that the Kennecott Point major carbon and sulfur anomalies are entirely located above the beds with abundant alsatitids and contain the highest Badouxia, establishing a Late Hettangian age of the isotope excursions. Note that these isotopic anomalies are concomitant with the destruction of the Tethyan carbonate platforms related to the opening of the Atlantic Ocean. A partial erosion and dissolution of the carbonates and evaporites recorded in these platforms could simultaneously explain the two excursions.

References

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