

## **A positive $^{13}\text{C}$ excursion recorded by Lower Triassic marine carbonates from the western central Dolomites, N.-Italy, a special situation in the western Tethys?**

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During the Upper Permian and Lower Triassic, the Dolomites were a shallow marginal basin at the western end of the Tethys ocean. During Lower Triassic times several sea level fluctuations occurred with a period of even inter- to supratidal conditions. This period is represented by the silt- and sandstone dominated upper Seis and Campil members of the Werfen formation, which contain abundant limestone intercalations. The carbon isotope record of these carbonates is characterized by an irregular rise of the  $^{13}\text{C}$  values from +1‰ relative to V-PDB in the upper Seis member to +6‰ in the Campil member. The  $^{13}\text{C}$  maximum is then followed by a pronounced and rapid drop to values below -1‰ in the upper Campil member. This pattern was identified in two stratigraphic sections (Pufels, Gröden valley and L'Om Picol, Passo San Pellegrino) that are spatially separated by about 30 kilometers.

The positive  $^{13}\text{C}$  excursion is comparable in size with isotopic changes at the Permian/Triassic boundary. It may indicate changes in the depositional environment due to changes in the marine circulation system between the deep ocean and the shallow shelf regions. This view is corroborated by the general lack of platform carbonates in this period. Alternatively a period of greenhouse climate could explain the positive  $\delta^{13}\text{C}$  excursion.