



High resolution carbon-isotope stratigraphy and bio- and palynostratigraphy of the Triassic-Jurassic transition in the Northern Calcareous Alps (Austria) – new data from the Hinteriss section

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The end-Triassic is characterized by enhanced rates of biotic turnover in both the marine and the terrestrial realms. One of the key issues in deciphering the end-Triassic extinction puzzle is an exact age assessment of the crises on land and in the sea. Here, we present the preliminary results of an integrated study of the palynomorph assemblages and the carbon-isotope composition of organic matter in the Hinteriss section in Tyrol (Austria). Carbon-isotope values from bulk organic matter show significant fluctuations through the Triassic-Jurassic boundary interval with two prominent negative $\delta^{13}\text{C}_{org}$ excursions.

An initial negative carbon-isotope excursion occurs at the transition from the Koessen Formation to the Kendlbach Formation. Although Triassic ammonoids and conodonts have their highest occurrence at the top of the underlying Kössen Formation, the palynomorph and calcareous microfossil assemblages indicate still a Rhaetian age for the lowermost part of the Kendlbach Formation (i.e. Schattwald Beds of the Tiefengraben Member). Increased spore abundance together with the disappearance of distinctive Late Triassic pollen types (e.g. *Ovalipollis*, *Rhaetipollis*) indicates vegetation changes on land that are contemporaneous with the marine biotic crisis.

A second negative carbon isotope excursion occurs in the middle part of the Tiefengraben Member. Based on palynological evidences, the Tr-J boundary may be drawn

at about this level. A corresponding, newly found ammonite horizon with *Psiloceras* cf. *tilmanni* (some 15m below the *P. calliphyllum* interval) records the so-far oldest Jurassic ammonite of the Tethys and Western Europe, and underlines the stratigraphic importance of the level. The results of the Hinterriss section (Karwendel syncline) will be compared to the Tiefengraben section, which is located to the East in a more marginal setting of the same basin.