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Microfacies analysis, isotope stratigraphy, organic geochemistry and crush-leach analysis of the Late Triassic Raibl Group (Julian Alps, NW Slovenia)

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We investigated the Late Carnian shallow-water Raibl Group in the Julian Alps (NW Slovenia). The studied section is located in the foothills of Mt. Mangart. We present a correlation of microfacies changes triggered by sea-level changes with high resolution isotope stratigraphy and crush-leach data of the sequence boundaries.

After the demise of the Wetterstein platforms (Late Ladinian-Early Carnian) deposition of siliclastic-carbonatic-evaporitic Raibl Group started in the Middle Carnian (Julian) - known as the Carnian Pluvial Event. The deposition of the shallow-marine Raibl Group is controlled by sea-level changes. With the onset of Late Carnian Dolomia Principale the next carbonate platform cycle started.

By microfacies analysis we determine at least four different cycles, starting with bioclastic rudstones, which show indications of volcanism. The second cycle starts with shales with tempestites (TST), marls and marly limestones with intercalated bioclastic packstones. In the second cycle organic rich marls and clays were deposited with significant terrestrial input (kerogene type II & III) and contain substantial amount of PAH. The third cycle starts with bioclastic floatstones (TST), micritic limestones and marls with tempestites and is topped by bioclastic floatstones, mudstones and marls with no indications of volcanism. The fourth cycle is represented by deposition of the Dolomia Principale. All cycles mentioned above are reflected in the oxygen and carbon isotope curves. Sequence boundaries are characterized by a major drop in the oxygen isotope values; evident also in the microfacies characteristics.

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