Palynological respond at the Cretaceous/Paleogene boundary in the Northern Calcareous Alps, Gams area, Austria

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For the first time, an integrated palynological investigation was carried out across the Cretaceous/Paleogene (K/Pg) boundary in two sections (Knappengraben and Gamsbach sections) in the Gosau Basin of Gams in the Eastern Alps, Austria.
More than 180 dinoflagellate species and subspecies were identified from 88 rock samples concentrated around the K/Pg boundary. In most samples the dinocysts are well preserved but associated with reworked material. The dinoflagellate cyst assemblages from most samples are dominated by *Achomosphaera ramulifera* (Deflandre, 1937) Evitt, 1963, *Heterosphaeridium cordiforme* Yun, 1981*, Hystrichosphaeridium salpingophorum* Deflandre, 1935, *Hystrichosphaeridium tubiferum* (Ehrenberg, 1838) Deflandre, 1937, *Riculacysta amplexus* Kirsch, 1991, Trithyrodinium evittii Drugg 1967, *Areoligera* spp, *Spiniferites* spp, *Batiacasphaera* spp and *Cordosphaeridium* spp.
Bioevents, such as the *Spongodinium delitiense* (Ehrenberg 1838) Deflandre 1936 acme which is known from other K/Pg boundary sections around the world, were recognized within both sections 90-110 cm above the K/Pg boundary.
Quantitative analysis of the most abundant genera such as *Achomosphaera*, *Areoligera*, *Batiacasphaera*, *Cribroberdinium*, *Glapherocysta*, *Heterosphaeridium*, *Hystrichosphaeridium*, *Peterodinium*, *Spiniferites* and *Spongodinium*, the Peridinioid/Gonyaulacoid (P/G) ratio and the palynofacies (by counting the total sedimentary organic materials (TSOM) as phytoclasts (brown and black materials), amorphous organic material (AOM), and palynomorphs (dinoflagellates, foraminiferal linings, spores and pollen grains)) were applied to interpret the paleoenvironmental conditions.
Preliminary results suggest that most residues are characterized by abundant sedimentary organic materials (SOM) which are dominated by phytoclasts. The paleonvironment was outer neritic marine with a high terrestrial influx and was characterised by low productivity except above the K/T boundary (90-110 cm) which was highly productive.