Triassic part of the section ends with limestones sometimes with cherts and is overlain by Egerian breccias.

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The GSSP for the base of the Jurassic is in the Northern Calcareous Alps (Kuhjoch section; Karwendel Mountains, Tyrol, Austria)

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The Kuhjoch section near Hinterriss (Tyrol, Austria) was ratified in April 2010 as GSSP for the base of the Hettangian Stage and, as such, the base of the Jurassic System.

Sedimentary successions across the Triassic/Jurassic boundary which are expanded and highly fossiliferous in the Northern Calcareous Alps are restricted to the so-called Eiberg Basin, a Rhaetian intraplatform depression, that can be traced over 200 km from the Salzkammergut (Kendlbachgraben, Upper Austria) in the east to the Lahnewiesgraben valley (northwest of Garmisch-Partenkirchen, Bavaria) in the west. Flanked by carbonate platforms to the north and south, this continuously subsiding basin reached 150-200 m water depth in late Rhaetian time and was, therefore, less affected by the end-Triassic sea level drop which led to widespread and longer-lasting emersion of the surrounding shallow water areas. Instead, marine conditions prevailed in the basin across the system boundary, though a distinct and abrupt lithological change from basinal carbonates of the Koessen Fm. (Eiberg Mb.) to marls and clayey sediments of the lower Kendlbach Fm. (Tiefengraben Mb.), which is interpreted as a result of this sea level fall. This drastic change in lithology was interpreted during the last decade as the T-J boundary because it coincides with the disappearance of typical Triassic fossils such as ammonoids and conodonts. New studies demonstrate, however, that the lower metres of the Tiefengraben Mb. (=„Rhaetische Grenzmergel“ sensu FABRICIUS 1960 - including also the reddish Schattwald Beds) still yield a Triassic micro- and nannoflora and that the earlier cessation of Triassic macrofauna may be an effect of detoriating environmental conditions. With a thickness of more than 20 m, the Karwendel Syncline exposes the most expanded Triassic-Jurassic boundary succession within the Eiberg basin as well as worldwide. The well-exposed section displays a high and continuous sedimentation rate with a constant facies trend across the boundary level. It contains well preserved and frequent fossils and an abundant microflora allowing a cross-correlation with the continental realm.

The exact level is 5.80 m above the top of the Koessen Formation and corresponds to the FO of the ammonite *Psiloceras spelae tyrolicum* HILLEBRANDT & KRYSTYN. This taxon relates to the group of *Psiloceras tilmanni* that is considerably older than other Northwest European psiloceratids (i.e. *Psiloceras erugatum*, *Psiloceras planorbis*) and is comparable with the oldest *Psiloceras* in North America (Muller Canyon, Nevada, USA) but is much better preserved (aragontic shell, whorl section and complete suture line). The ammonite event correlates to the FO of *Cerebropollenites thiergartii*, a widely distributed palynomorph and Early Jurassic marker in continental successions. Additional boundary events are the FO of the aragonitic foraminifer *Praegubkinella turgescens* and of the ostracod *Cytherelloidea buisensis* 60 cm below the proposed stratotype point and the disappearance of the ostracod *Eucytherura sagitta* immediately above the point. The $\delta^{13}C_{org}$ record shows an initial strong negative excursion near the boundary between the Koessen and Kendlbach Formations that may be worldwide correlatable. The Triassic/Jurassic bioevent lies shortly above this negative peak. The stratotype point coincides with a shift to more positive $\delta^{13}C_{org}$ values**.**

Fluid assisted Cataclastic Deformation in quartzitic rocks (Portizuelo Antiform, Luarca, NW Spain)

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The outcrop at the Portizuelo Beach in Western Asturias presents an antiformal bulge of the transition zone between siliciclastic and marine sediments. The core of the antiform comprises of pure, rigid and resistive quartzitic rocks, severly damaged by brittle deformation and cataclasis. Two large transform faults with a particular thrust component can be found in the hinge area. They are clearly in charge of the damage of the surrounding rocks. The faults accommodate the main part of the deformation, but also sub-parallel cataclastic bands show evidence for lateral movement. Originating from the fault planes, fluidized cataclasites pervade the rock mass, leading to further fracturing. Obviously the fracturing ceases with increasing distance from the transform faults. The fluidized material tends to use preexisting planes, such as bed interfaces, joints or veins for its intrusion. Additionally the fluids are responsible for the cementation of the cataclastic zones, generated during incremental strike slip deformation.