the surrounding climatic, topographic, geomorphological and geological conditions. 

Methods: Field campaigns are planned for spring and summer 2012. These include: geomorphological mapping, establishing ground and water temperature records, conductivity testing with a conductivity temperature depth (CTD) monitor, ground penetrating radar (GPR) transects to study the subsurface, analyzing ground temperature records, and analyzing satellite images of the area.

Results: Results from a preliminary 2010 geomorphological mapping study conclude that lake water is actively draining into the subsurface during the melt season. The amount of water loss cannot be accounted for by surface drainage or evaporation loss alone, leaving the subsurface as the only option for the distinct lowering of water levels. Shallow active layer ground temperature records are available for some locations around the lake system. The records show that ground temperature from locations around the lakes are higher than in all other periglacial landforms with continuous permafrost in Svalbard. Results from the 2010 study and the temperature evidence established an interest to continue the project. Initial results from the 2012 field campaigns will be available by fall 2012.

Preliminary Conclusions: Current results conclude that a karst system allows water to actively drain into a permafrost zone in the subsurface at Kapp Linné. The planned field measurements from 2012 will incorporate the earlier mentioned methods to draw further conclusions of the status of the processes occurring both on the surface and subsurface at the karst lakes.

FIRST THERMAL, MORPHOLOGICAL AND ICE TYPES STUDIES IN THE PEÑA CASTIL ICE CAVE (PICOS DE EUROPA, CANTABRIAN MOUNTAINS. NORTHERN SPAIN)

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The Picos de Europa is the highest massif in the Atlantic Mountain of Southwestern Europe. It reaches the high mountain belt (between 1800-2650 m a.s.l) and it is characterized by a nivoperiglacial morphodymanic and a periglacial one above 2200 m.a.s.l, where the snow and cold shape inherited glaciokarstic landscape. Present day there are not glaciers, but still remain three ice-patches. The topography, climatic conditions, thick carboniferous limestones and significant altitude differences make possible an important endokarstic development, mainly vertical, in which some of
the deepest caves in the world are located. In this context are common the ice caves.

The Peña Castil ice cave is located in the central massif of Picos de Europa in a glacial cirque under the Peña Castil summit (2444 m) and hung on the Duje valley. The principal entrance is at 2010 m a.s.l with an eastern orientation without others remarkable entrances. The horizontal development is approx. 65 m length and the vertical one is unknown. The cave is organised in an access sloping ramp, two main principal rooms in which the ice block is located, and a terminal room, the smallest. The ice perennial deposit surface is 448 m$^2$ and its depth, till now known, is at least -15 m. It involves an estimated ice filling at least 6700 m$^3$.

First climate results obtained by continuum dattaloggers inside the cave and exterior meteorological stations, attached to karst morphology, show us a static behaviour for the cave. Two main thermal periods can be differentiate: the open period, between November and February, characterised by the influence of external conditions (heterothermal regime predominance); and the closed period, gets free of external influences and with stable temperatures closed to freezing point (homothermal regime predominance), is developed between May and September. Also, two secondary periods, transitional ones, are been detected. In these cases the temperatures are increasing or descending progressively up to adjusting to the principal periods. The mean annual temperatures don’t overcome 0ºC in any zone of the cave during the control time, recording -4ºC for absolute minimum and exceptionally +2ºC for absolute maximum temperature only reach the terminal room some days in autumn. The distribution of temperatures shows different behaviour in the cave directed by the influence of the ice body. When the influence of the ice decrease, minor means annual temperature, major maximal values, or more days over the freezing point are registered.

Can be distinguished a principal ice accumulation period linked mainly to the melt of the snow cover (top time at the beginning of June), characterized by largest cryoespeleothems and a visible refreezing cap in the ice block surface in the established closed period. In the rest of the year the melting processes predominate, reaching the highest melt in winter season. Likewise we identified different ice structures and cryospeleothems depending on the origin and crystallization, highlighting some of them not appreciated in the others investigated ice caves in Picos de Europa, case of the radicular crystallization hoarfrost.