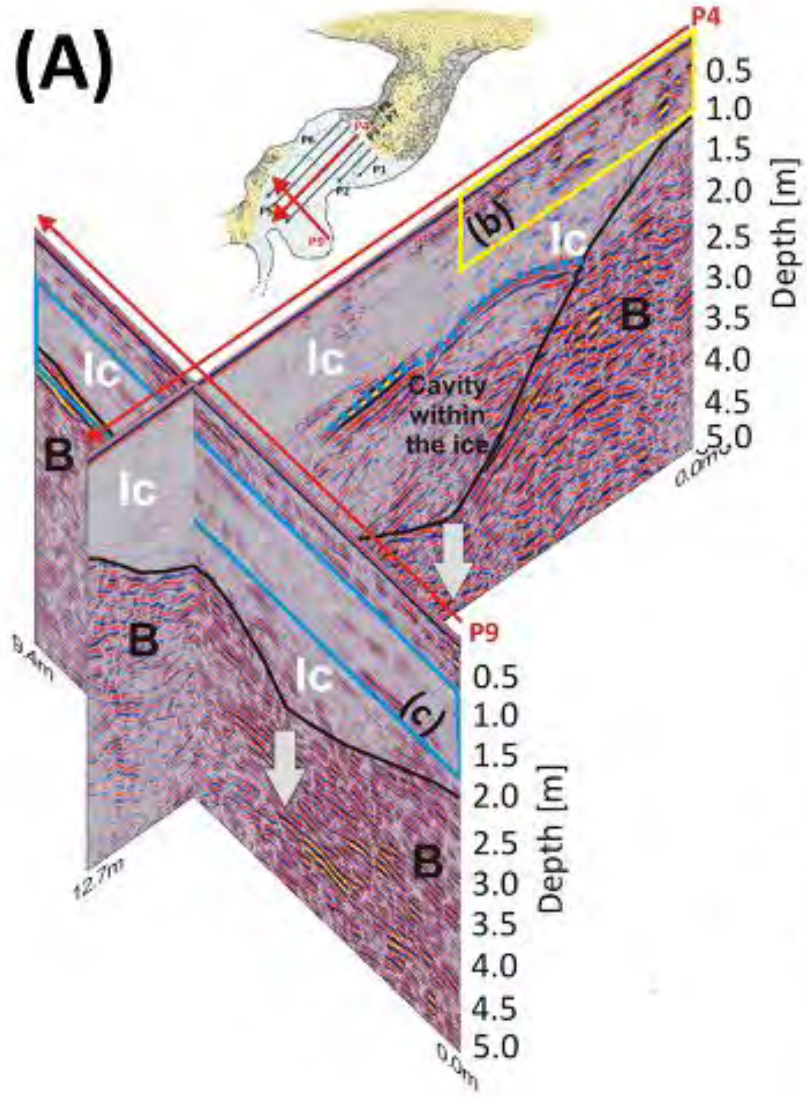
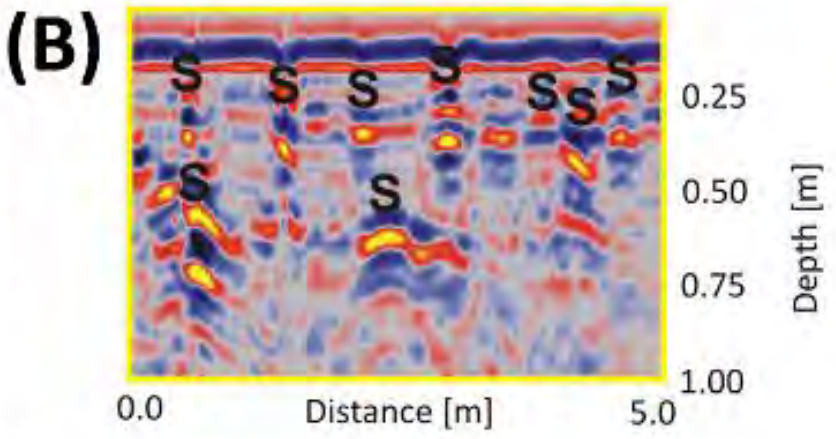
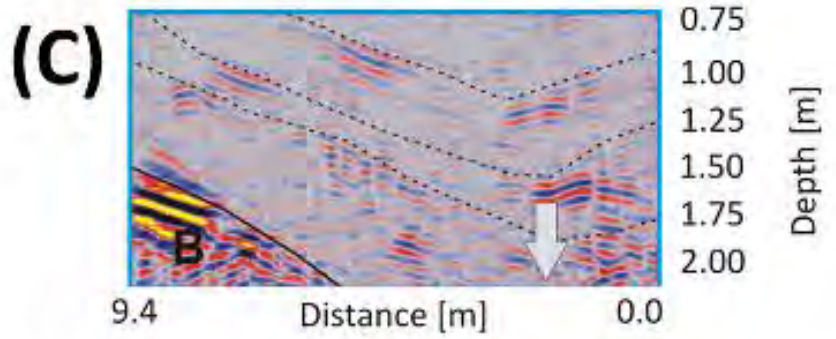
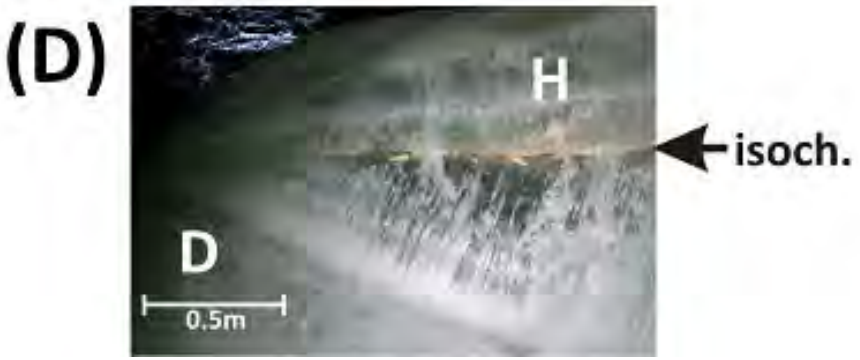
Colucci et al., submitted

LEUPA Ice Cave



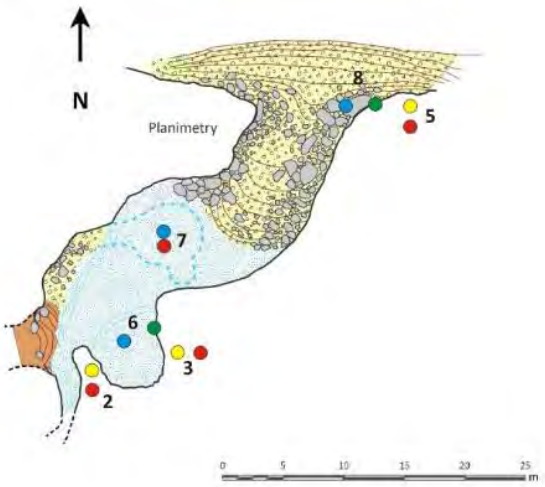


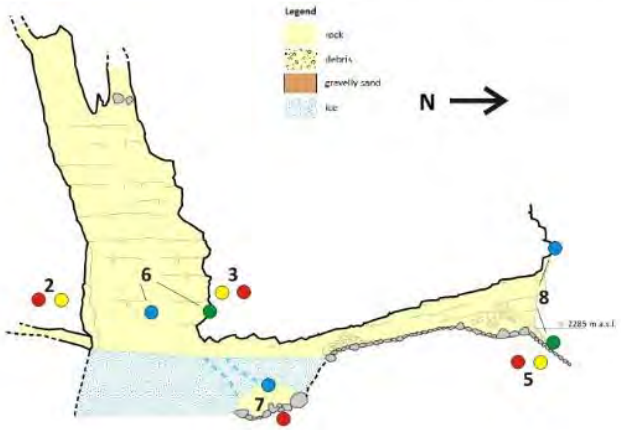




Colucci et al., 2016 - Geomorphology

LEUPA Ice Cave



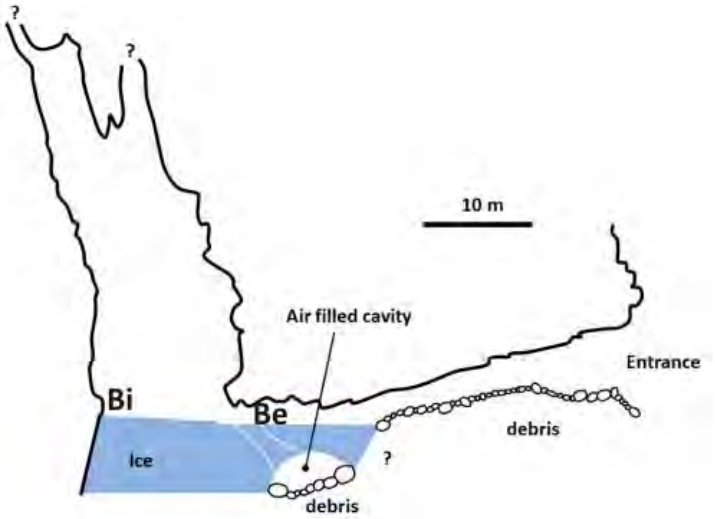


Microclimatology

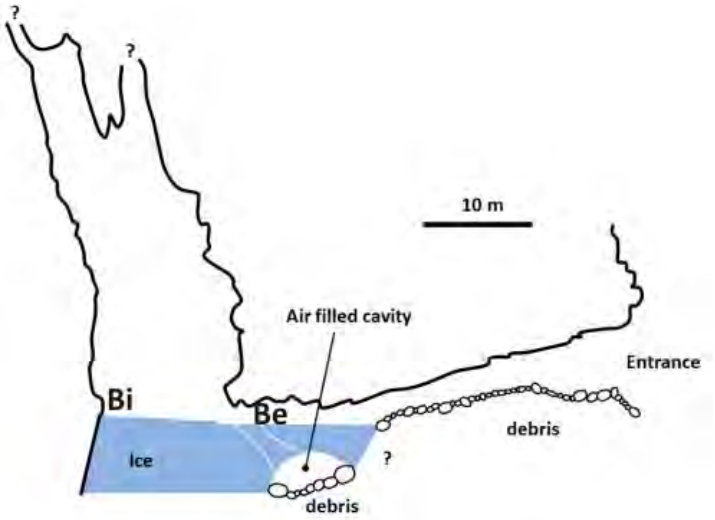
- 14 temperature monitoring sites since summer 2011 → Tinytag® dataloggers (rock, ice, air)
- MAAT = -1.4°C
- Rock in Permafrost (always <0°C ; t >2 years)

Colucci et al., submitted

LEUPA Ice Cave
Mass balance

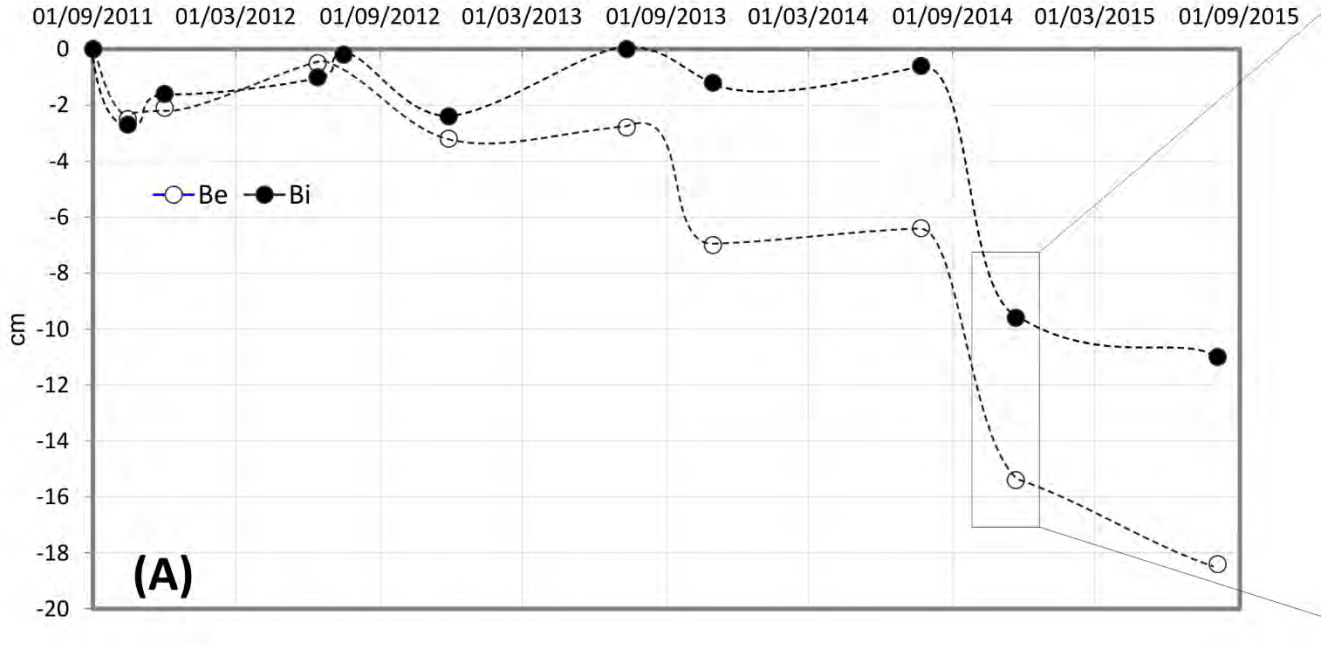


LEUPA Ice Cave
Mass balance

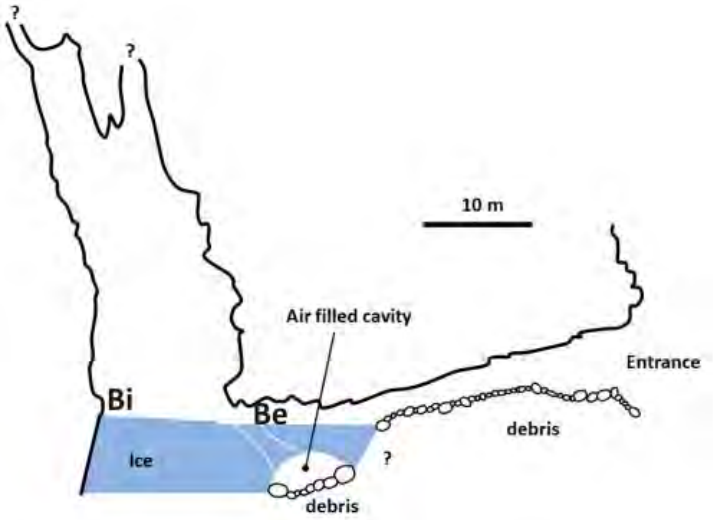


Bi = slight increase until 2014

- Annual cicle (autumn minima, summer maxima… 2-3-cm)
- - 9 cm 22 Jul 2014 – 20 Nov 2014



LEUPA Ice Cave
Mass balance

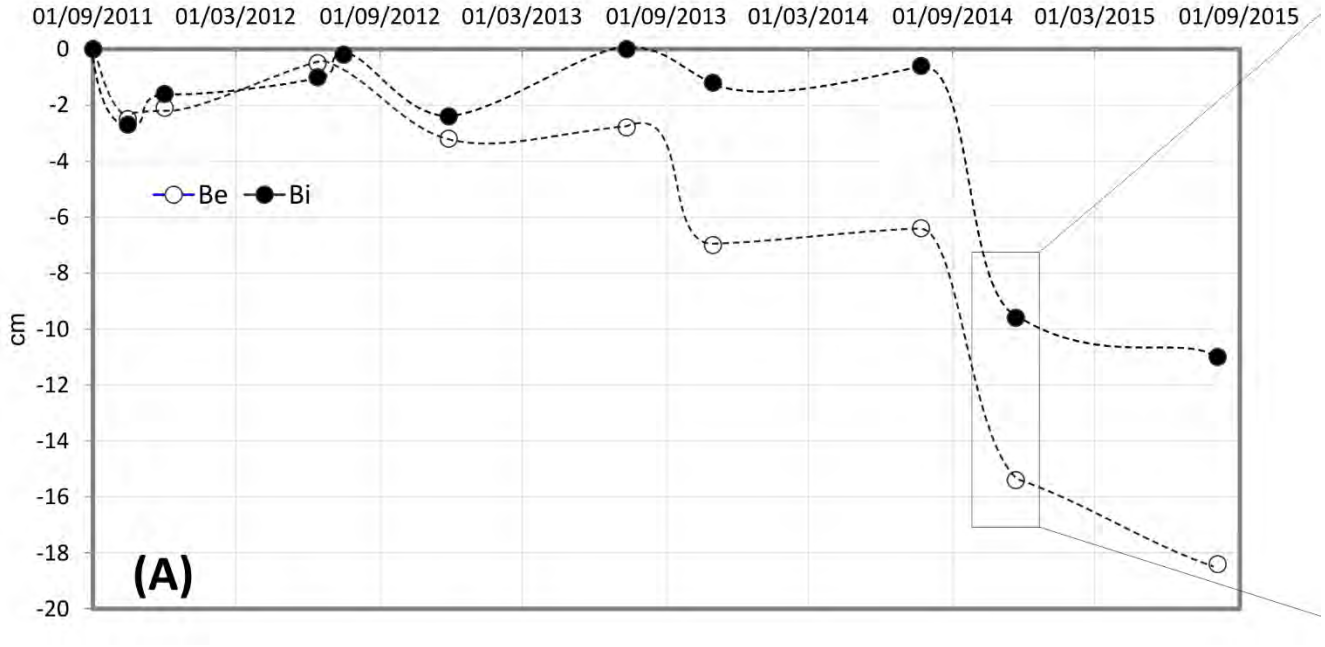


Bi = slight increase until 2014

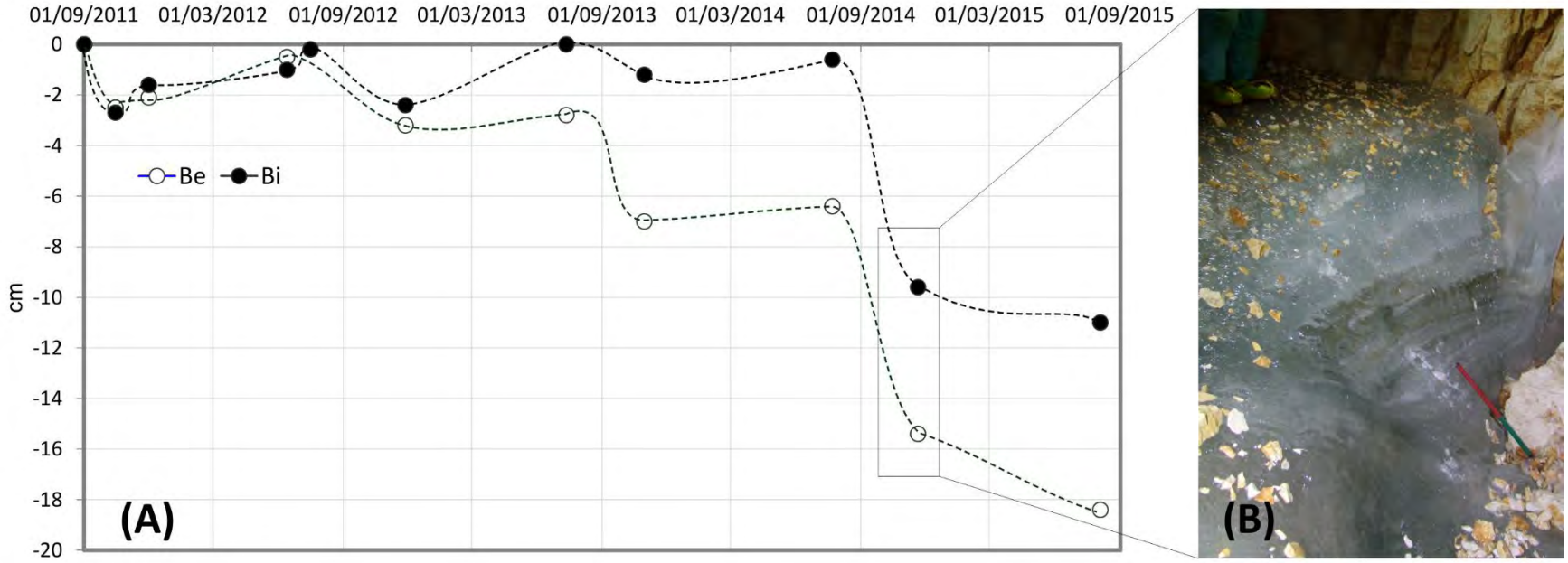
- Annual cicle (autumn minima, summer maxima… 2-3-cm)
- - 9 cm 22 Jul 2014 – 20 Nov 2014

Be = slight increase until 2014

- Decrease already since 2013
- - 9 cm 22 Jul – 20 Nov 2014
- -4.2 cm 12 Jul – 30 Oct 2013



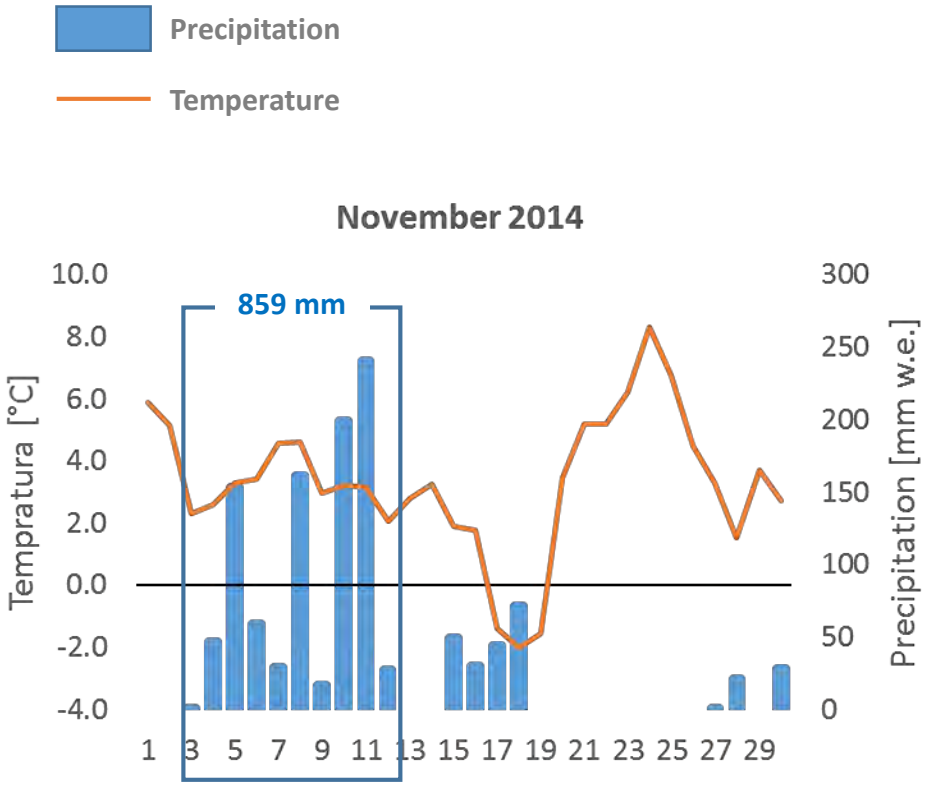
LEUPA Ice Cave

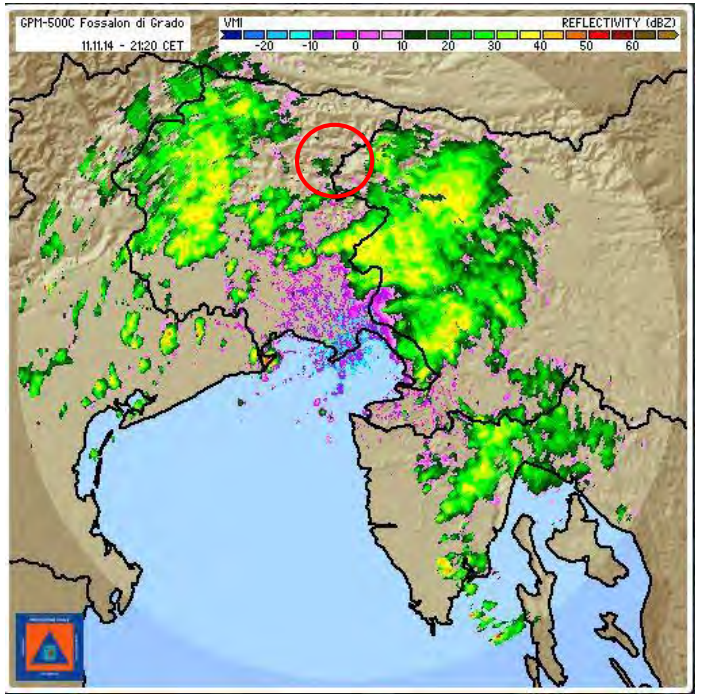


Colucci et al., 2016 - Geomorphology

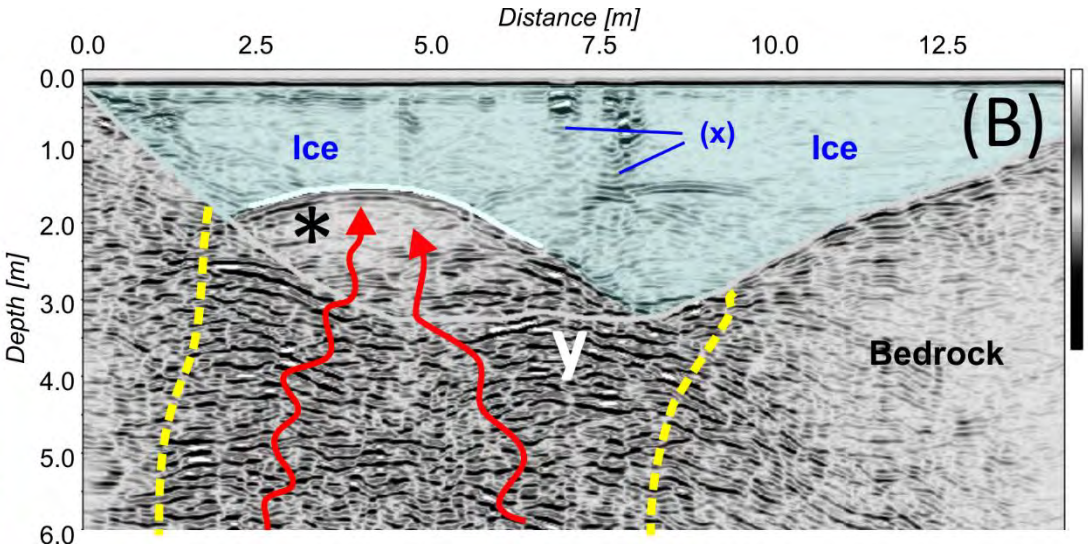
LEUPA Ice Cave

heavy precipitation events in autumn are a normal characteristic of the area (e.g., Manzato, 2007), but a higher than average ML produces heavy rainfalls at altitudes normally interested by snowfalls





LEUPA Ice Cave



Bertozzi et al., submitted

VASTO Ice Cave

- MAX ice thickness 8.5 m
- High debris concentration within the first 2 m
- Weak reflection coefficient at the bottom → possible frozen ground at the bottom ? (Koh et al. 1996)

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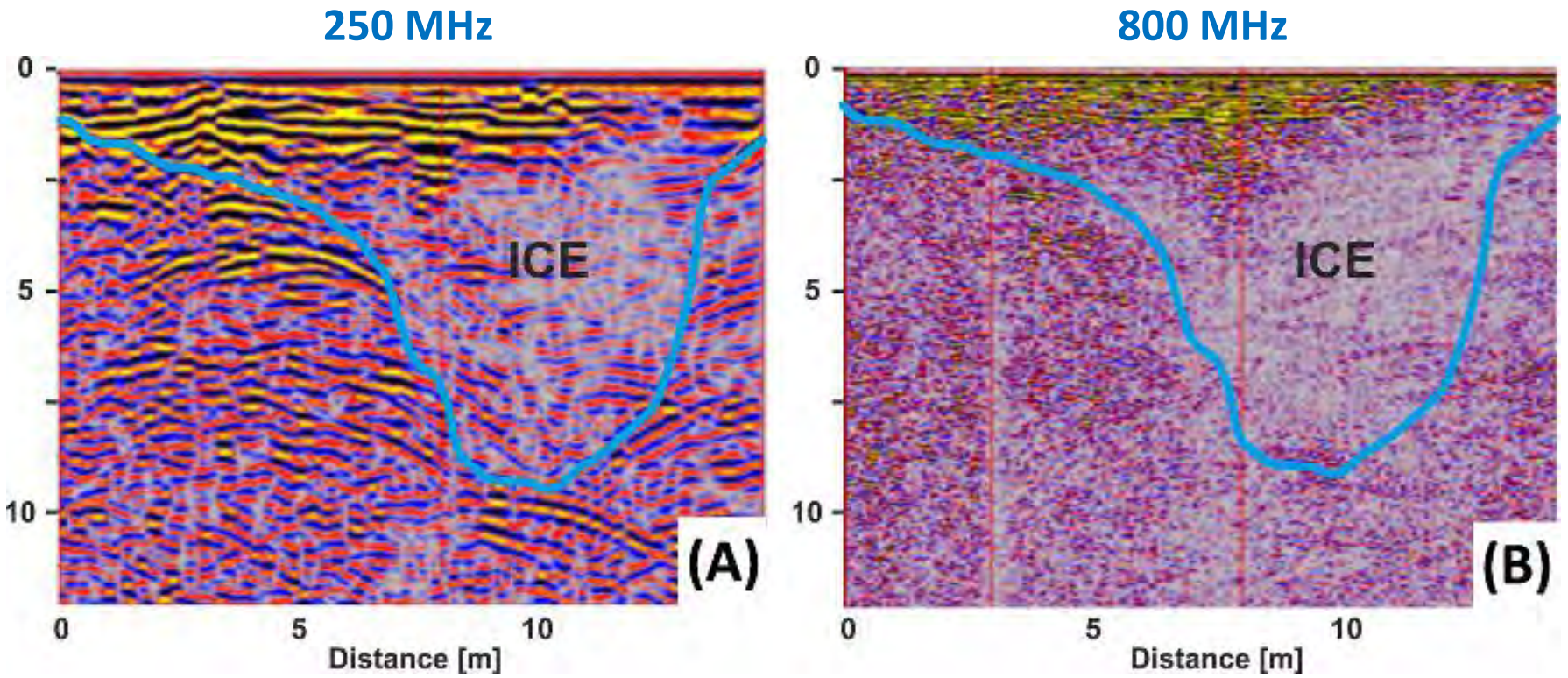
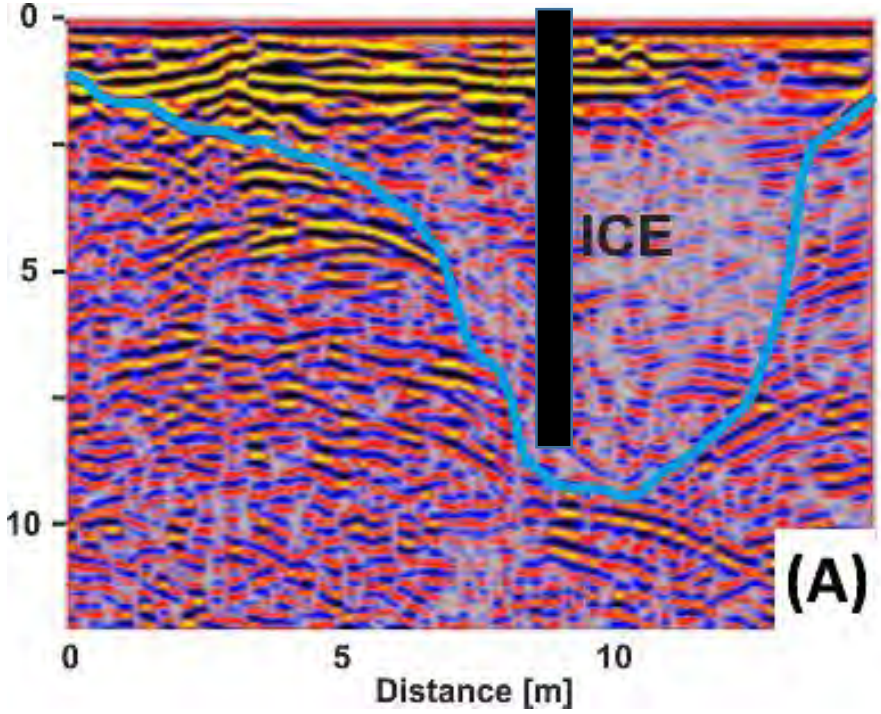


VASTO Ice Cave

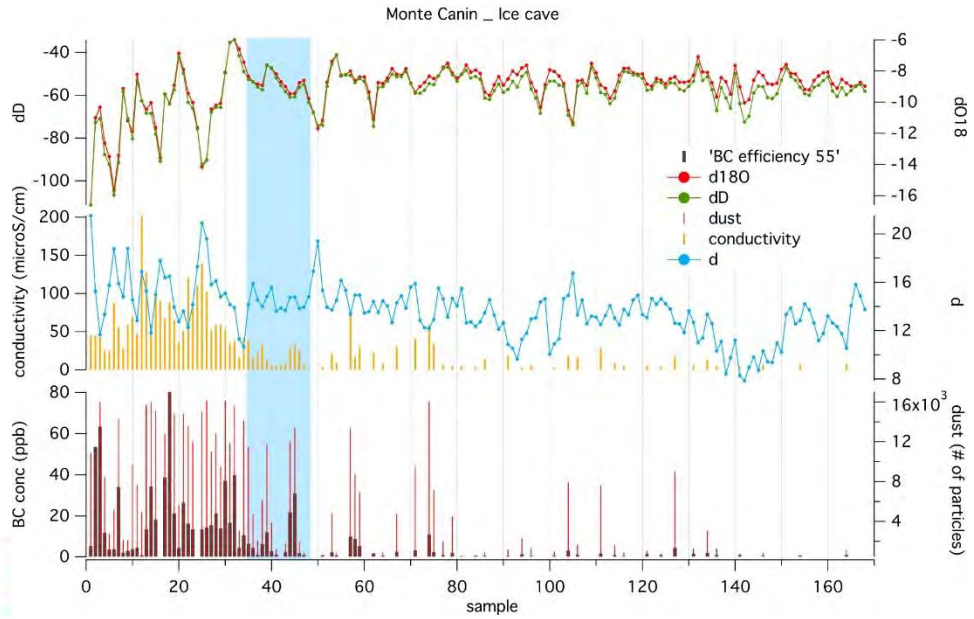
Colucci et al., 2014, 2016

7.8 m ice core



VASTO Ice Cave

Colucci et al., 2016
The Vasto ice cave in the south-eastern Alps, Europe: preliminary results from an ice core analysis
IWIC VII Postojna (Slo)



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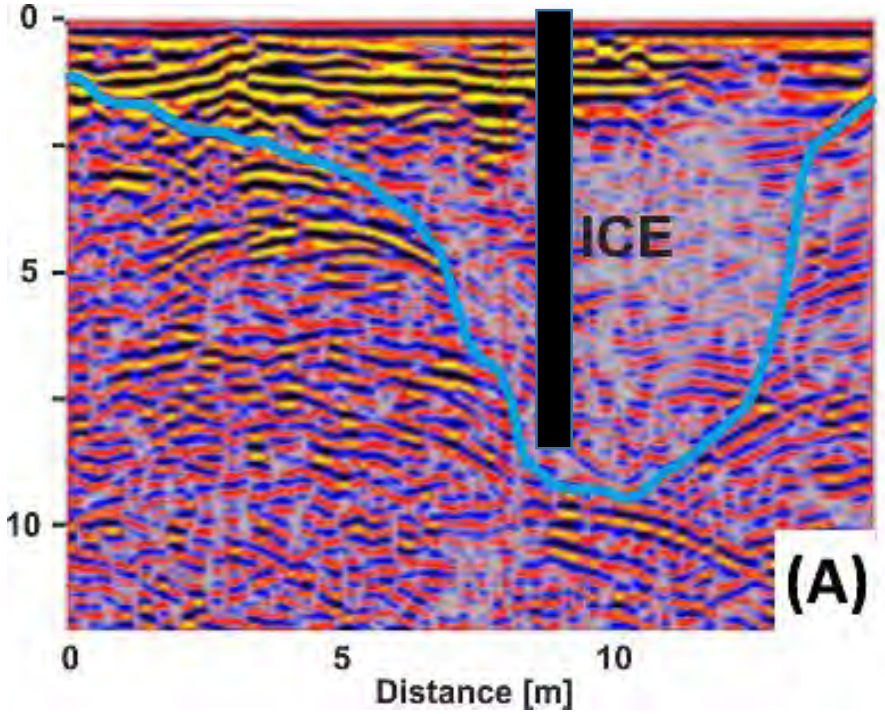
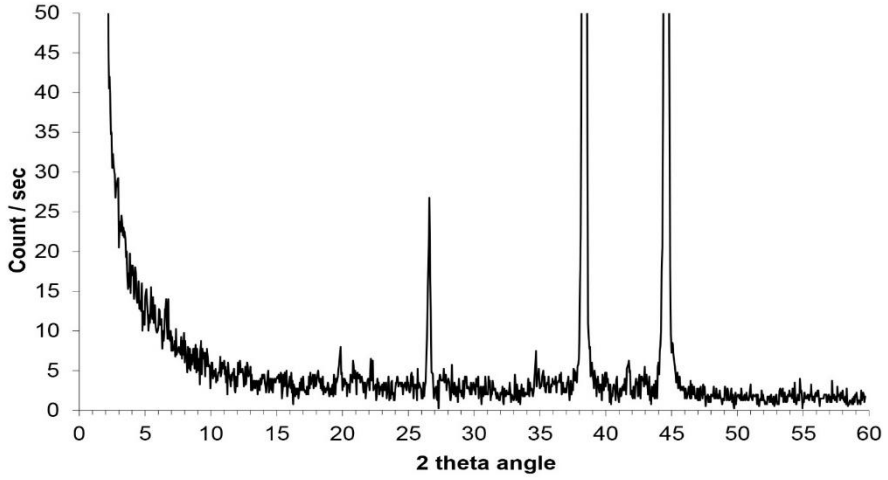




Cryogenic calcite

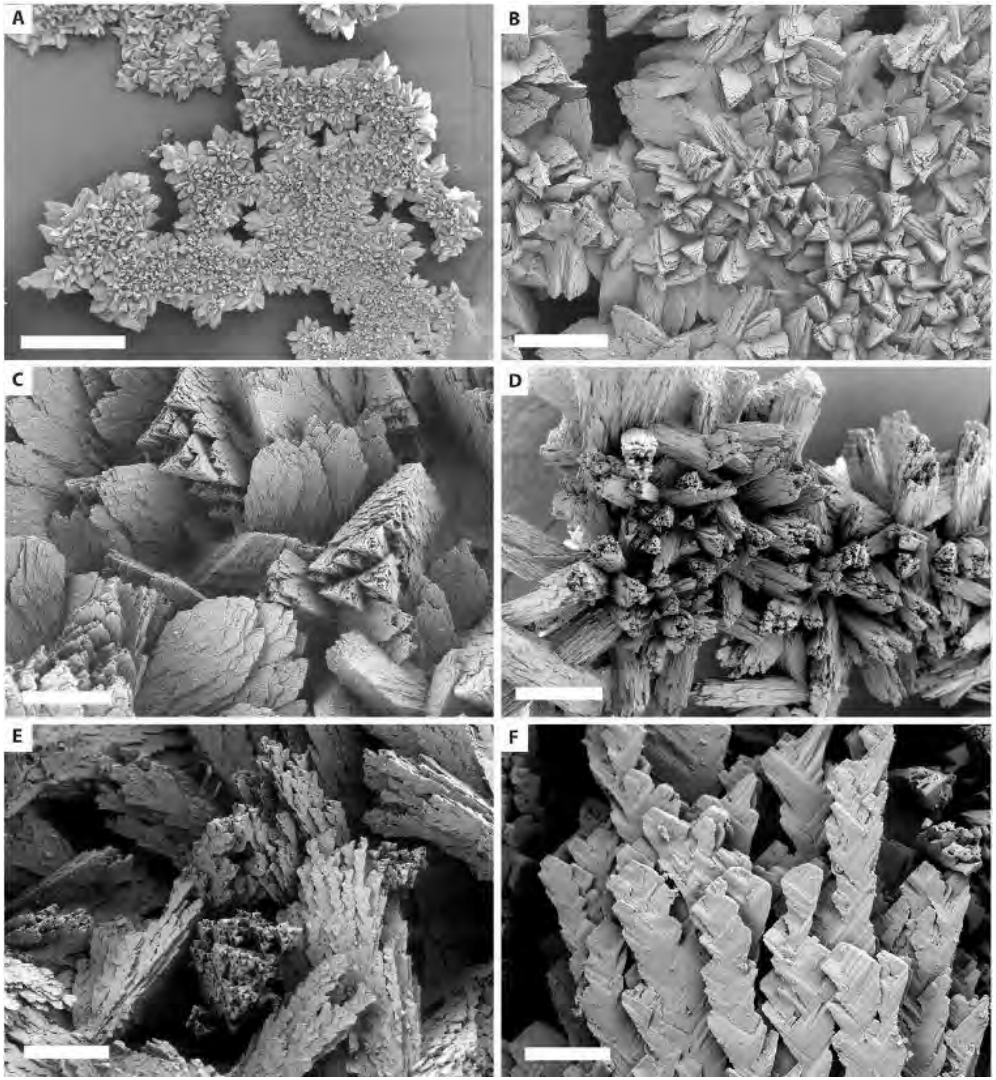
Cryogenic calcite deposits

(a) Typical occurrence of heaps of loose crystal aggregates (arrows)

(b) Close-up of cryogenic deposit consisting of brown and white crystal aggregates. Width of image 5 cm.

(c) Occurrence of loose brownish crystal aggregates intermixed with a few angular rock flakes on a boulder. Width of image 25 cm.

Cryogenic calcite



Morphology of cryogenic calcite crystals seen under the FE-SEM.
(a) Calcite raft
(b) Closeup of (a). Scale bar 0.2 mm
(c) Stepped faces on individual rhombohedral crystals.Scale bar 0.1 mm
(d) White crystal Aggregate. Scale bar 0.2 mm
(e) Details of white crystal morphology. Scale bar 0.1 mm
(f) Close-up of (e), revealing chevron-type crystal habits. Scale bar 0.02 mm