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Photogrammetrical monitoring of the Triglav glacier in Slovenia

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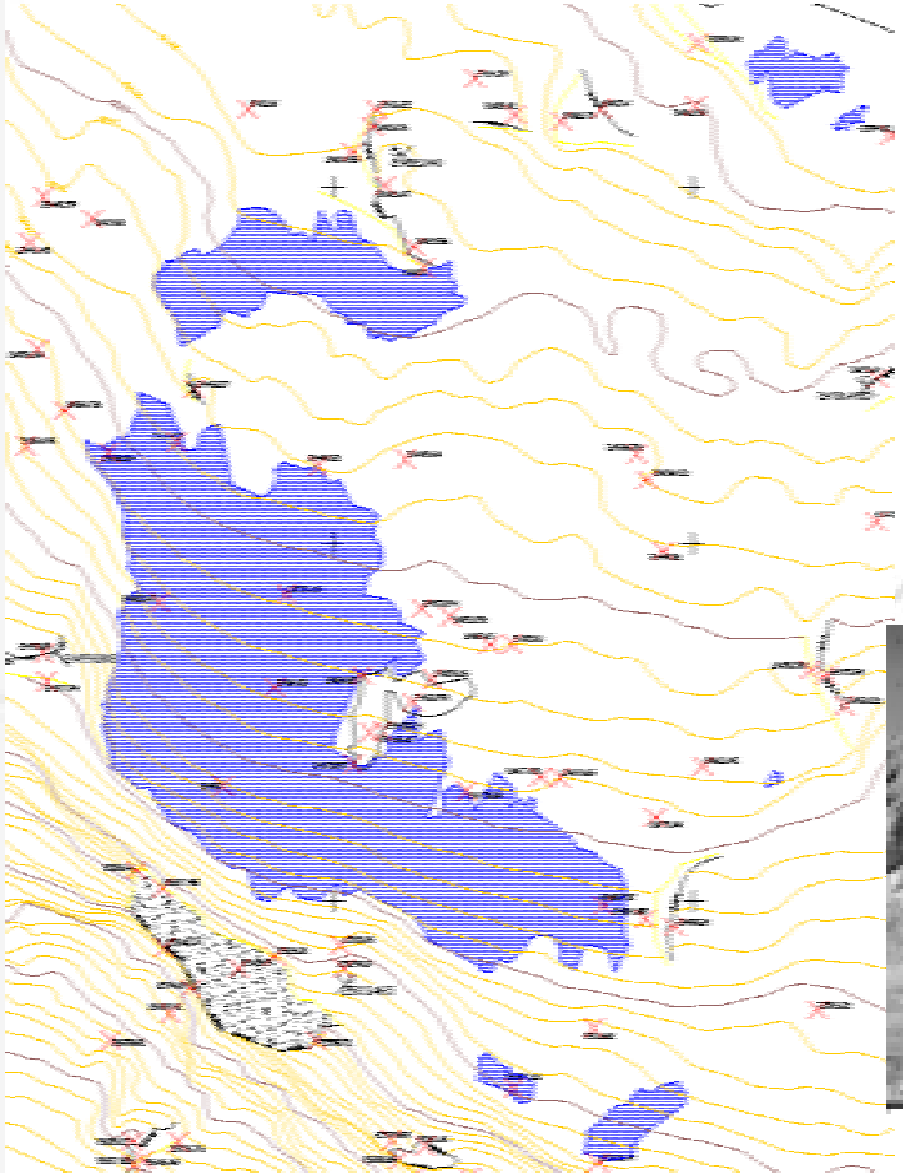
5th ICA Mountain Cartography Workshop
March 30, 2006, Bohinj, Slovenia

The monitoring of the Triglav glacier

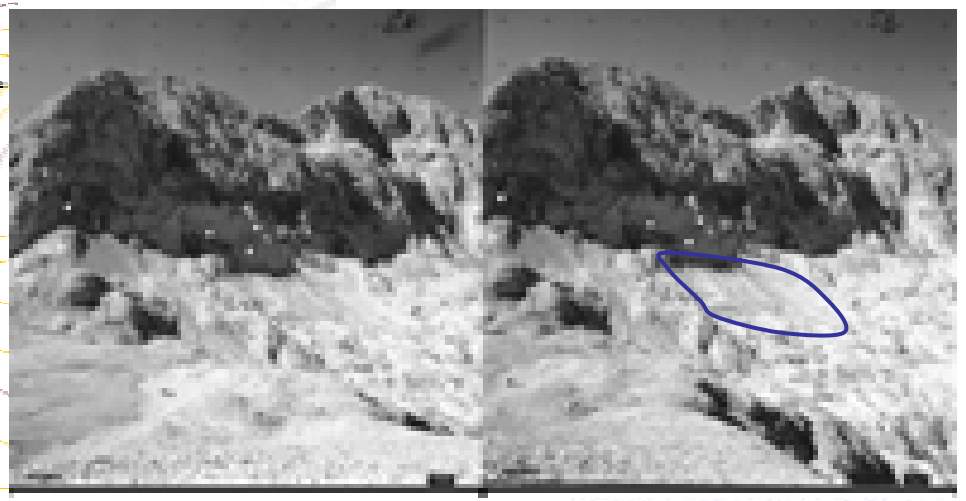
- The work of Geographical institute Anton Melink, ZRC SAZU
  - Regular monitoring of the glacier since 1946
  - Filming of the glacier with panoramic nonmetric camera Horizont from two fixed standpoints from 1976 on monthly basis
- Photogrammetric filming in 1999, 2001, 2003 and 2005
- The work on older aerophotographs from the Surveying and mapping authority of the Republic of Slovenia archives (1975)
- Conclusion

The Horizont photograph transformed into central projection from 8th May 1998.

The year 1999



- photogrammetric filming with hand-held Rolleiflex 6006 metric medium frame camera – from helicopter and from terrain
- Temporary control points measured in local coordinate system
- Data acquired by analytical photogrammetric instrument



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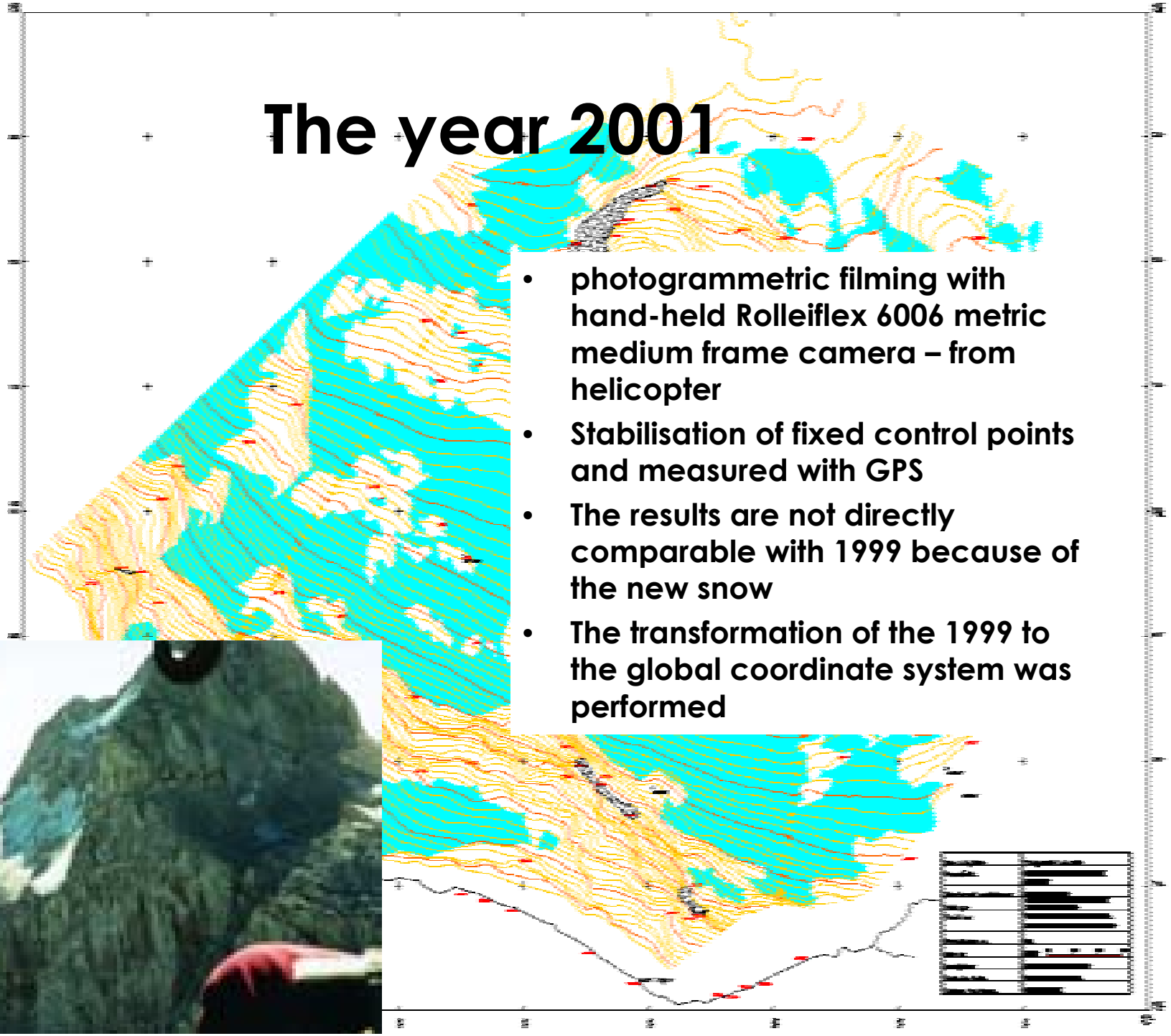
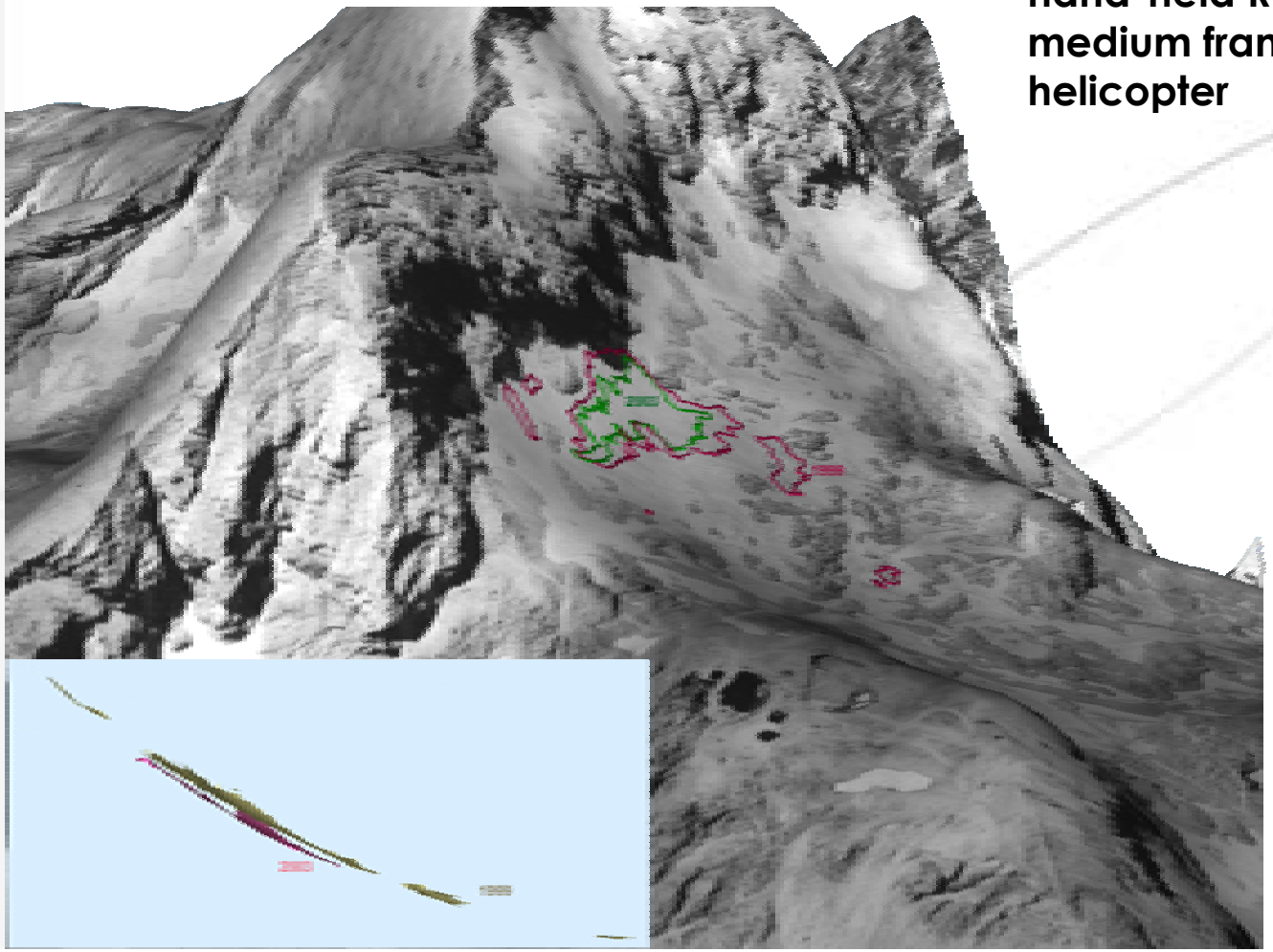
The year 2001

- photogrammetric filming with hand-held Rolleiflex 6006 metric medium frame camera – from helicopter
- Stabilisation of fixed control points and measured with GPS
- The results are not directly comparable with 1999 because of the new snow
- The transformation of the 1999 to the global coordinate system was performed



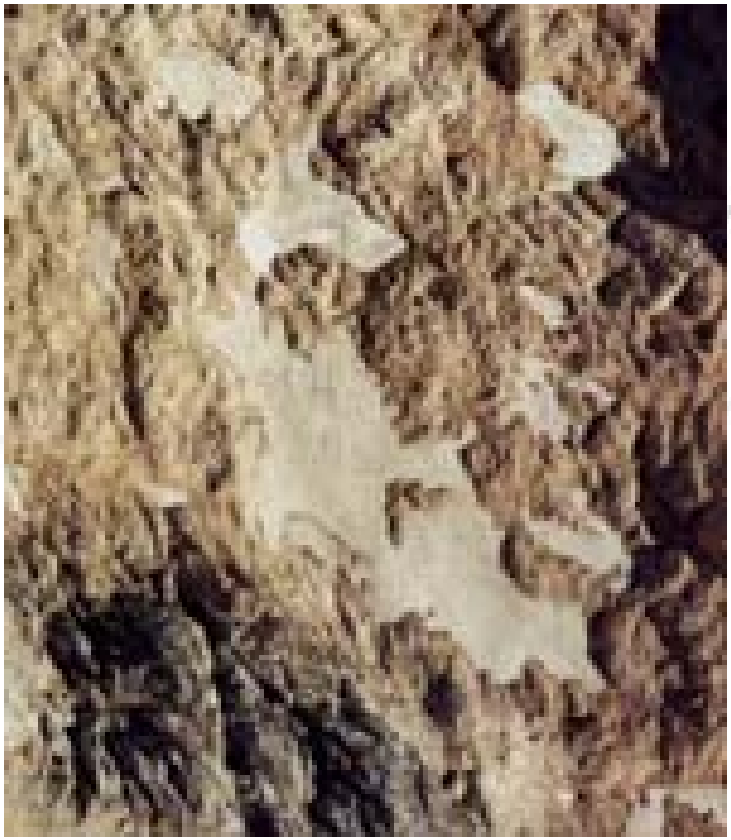
The year 2003

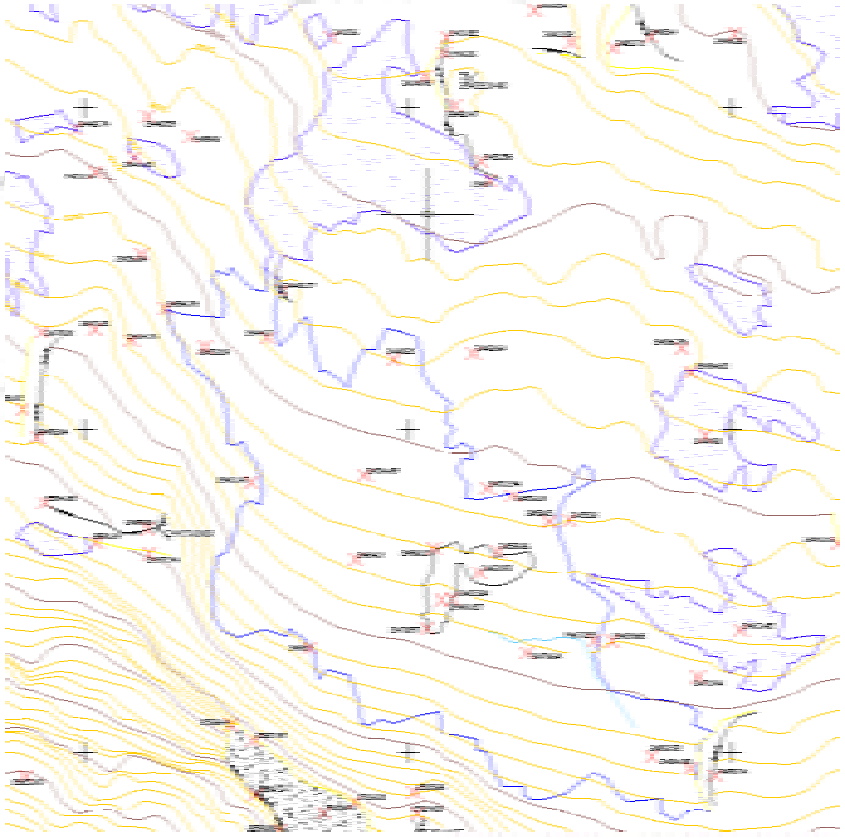
- Directly comparable with 1999 data
- photogrammetric filming with hand-held Rolleiflex 6006 metric medium frame camera – from helicopter



The year 2005

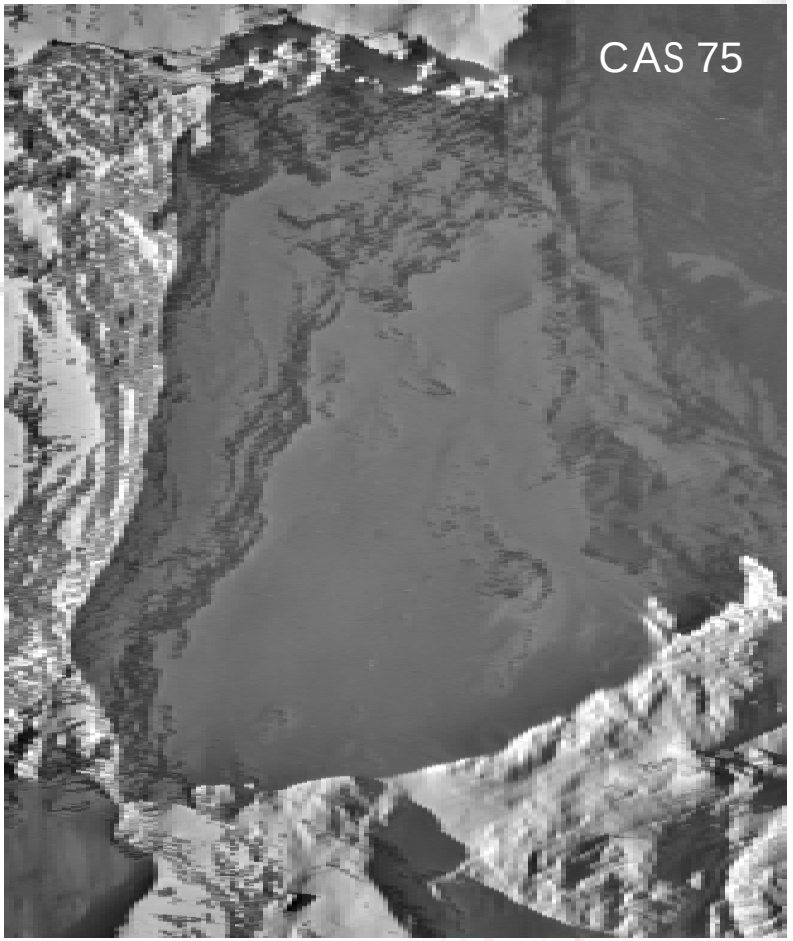
- Aerophotogrammetric filming with Leica RC30 camera
- New GPS measurements, new transformation to the national coordinate system
- The area was still covered with some old snow

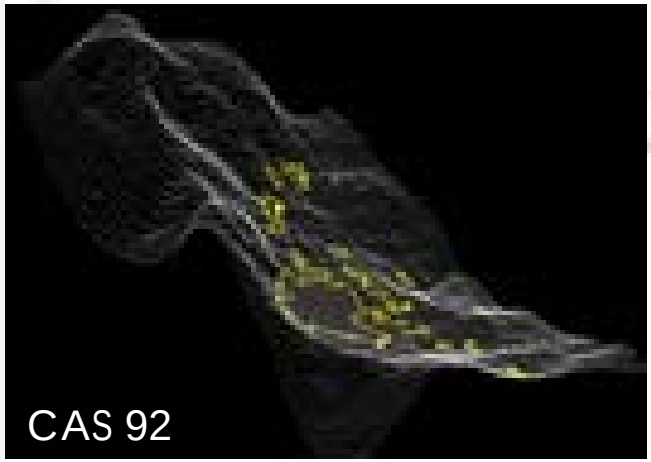




CAS – cyclical aerophotographing

- **Awailable CAS 1975, 1992, 1994, 1998**
- **The oldest stereopair from SMA CAS 75**
  - **Orientation on the basis of the same details seen on 2005 and 1975 aerophotographs**
  - **Orientation on the points was made with the accuracy of 0,5 m**
  - **The filming was made in autumn, new snow was already present, the area of the glacier is under the shadow – uncertain acquisition results**





Conclusion

- **On the basis of photogrammetrical filming we see the dissaperance of the glacier (because of a lot of snow it was bigger in 2005)**
- **Old CAS are usefull for checking the state of the glacier in the history**
- **Different methods for the acquisation of data should be developed for the specific archive photographs**