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Aim

Long-term and homogeneous snow time series

Problems

- Station relocation
- Observer change

Data

- Manual measurements, daily resolution, snow depth (HS) and new snow (HN)
- Two institutions:
 - SLF and MeteoSwiss
- 184 stations



-> Inhomogeneities or breaks in snow series

- Parallel observations
- Gaps filled with parallel series
- -> Which series to use?
- -> How to merge series?

- 33 parallel station pairs [SLF, MeteoSwiss]
- Distance < 3 km, Δz <150 m
- > 80 % data Nov Apr
- Elevation > 400 m a.s.l.

Break detection methods

- ACMANT, Climatol, HOMER
- Break valid if detected by 2/3 within ± 2 years





Adjustments





Homogenisation:

- Homer, Climatol, InterpQM
- 184 stations with 45 breaks in 40 series





Impact on trends

lSavg					HSmax				
Alp Grüm (2000 m) -									
Aip Gruini (2090 III) - Crimeel Heepiz (1070 m) -			•						-2000 m
Griffiser Hospiz (1970 m)									
SLIVIONIZ (1800 m)									
Sils-Maria (1802 m)	•		•		•				
Ritom Piora (1800 m) -	•	•	•	•					
2 ervrella (1735 m) - 2 ervrella (1735 m)	•	•	•	•		•	•	•	
Samedan (1726 m) -	•				•	•			
Murren_SLF (1650 m) -		•		•		•	•	•	
Murren_MCH (1641 m) -	-								
San Bernardino (1640 m) -	•			•				_	
Rigi Scheidegg (1640 m) -				•				•	
Montana (1590 m) -									
Grindelwald Bort (1565 m) -	•				•	•		•	
Davos Flüelastr. (1560 m) -									-1500 m
Zernez (1470 m) -	•	•							
Simplon Dorf (1470 m) -	•				•	•		•	
Splügen (1457 m) -	٠		•			•			
Sedrun (1432 m) -		•	٠	•			•	•	
Urnerboden (1395 m) -	•	•		•	•	•			
Saanenmöser (1390 m) -	•	•	•	•	•	•		•	
Sta.Maria (1415 m) -		•	•	•				•	
La Comballaz (1360 m) -	٠			•	•				
Unterwasser Iltios (1340 m) -		•		•		•	•	•	
Adelboden (1325 m) -	•	•		•	•	•			
Meien (1320 m) -	•			•	•	•			
Flumserberg (1310 m) -	•	•	•	•	•	•	•	•	
Gsteig (1195 m) -						٠	٠	•	
Klosters KW (1190 m) -	•	•	•	•					
Disentis (1190 m) -	•				•	•	•	•	
Göschenen (1110 m) -	•			•	•				
Filisur (1030 m) -		٠	•						4000
Elm (965 m) -	•	٠	•	•	•		•		-1000 m
Gross (897 m) -			•						
St. Gallen (779 m) -		•	•	•				•	
Fribourg-Posieux (634 m) -	•	•	•	•					

and extreme values

Alp Grüm (2090 m) -Grimsel Hospiz (1970 m) -St.Moritz (1850 m) -Sils-Maria (1802 m) -Zervreila (1735 m) -Samedan (1726 m) -Mürren SLF (1650 m) -Mürren_MCH (1641 m) -San Bernardino (1640 m) -Rigi Scheidegg (1640 m) -Montana (1590 m) -Grindelwald Bort (1565 m) -Davos Flüelastr. (1560 m) -Zernez (1470 m) -Simplon Dorf (1470 m) -Splügen (1457 m) -Sedrun (1432 m) -Urnerboden (1395 m) -Saanenmöser (1390 m) -Sta.Maria (1415 m) -



Outlook: operationalise the homogenisation procedure • Homer with Bart

Climatol with optimal input parameters



- Coupling
- InterpQM
- SPLIDHOM



