

# Hotel Rigopiano accident

18th January 2017 29 victims

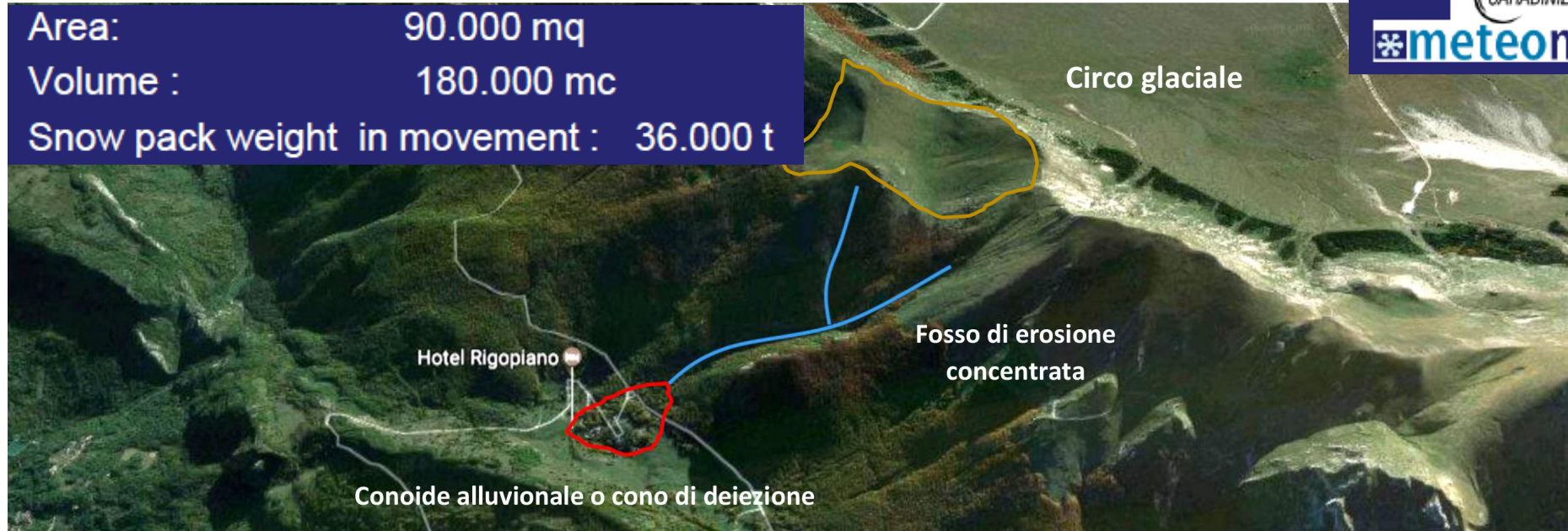




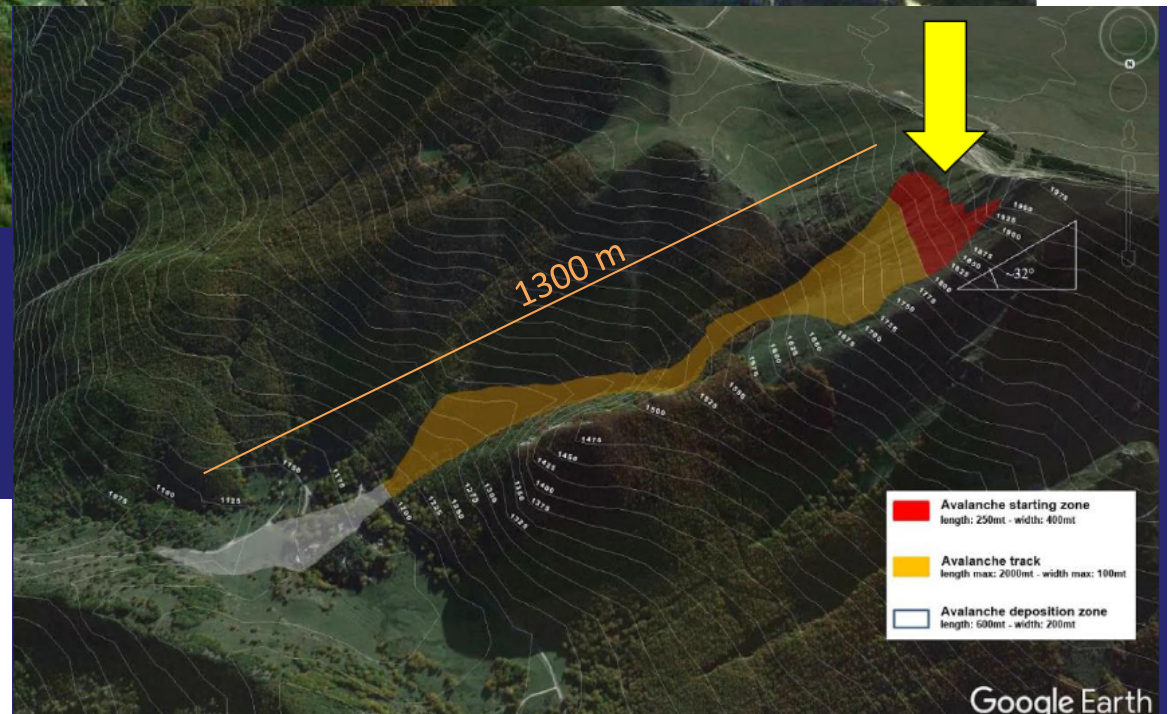
# Hotel Rigopiano accident



Area: 90.000 mq  
Volume : 180.000 mc  
Snow pack weight in movement : 36.000 t

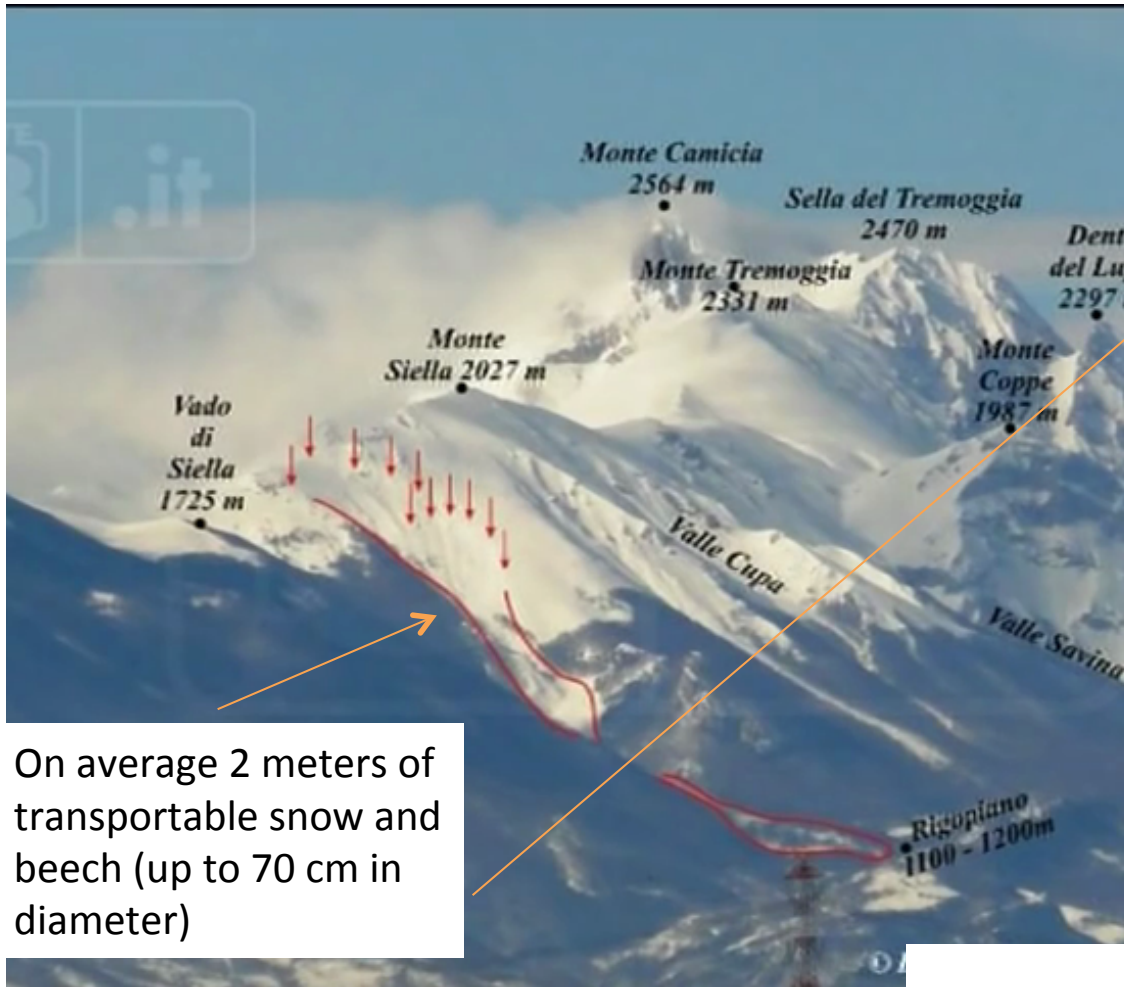


- Slab width: 250 - 400 mt
- Slab lenght: 250 mt
- Front depth: 2 - 3.5 mt
- Inclination: 35° - 45°





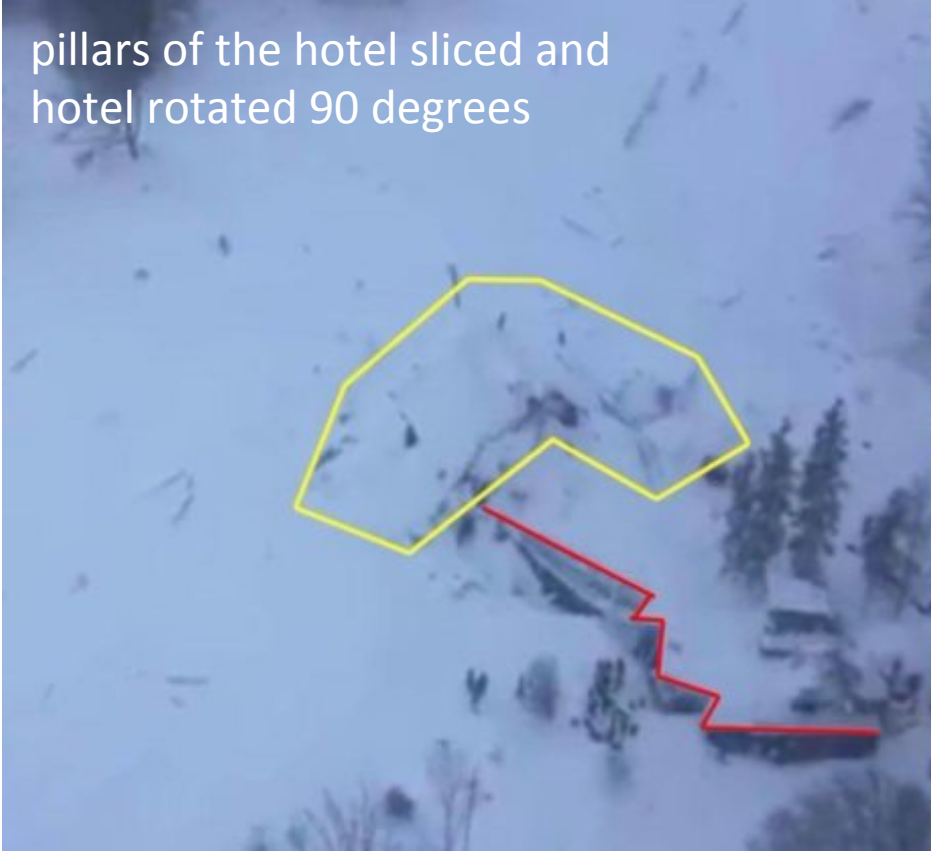
# Hotel Rigopiano accident







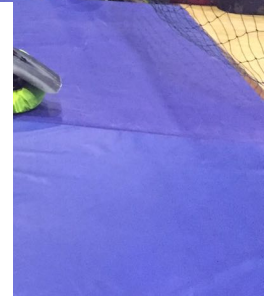
pillars of the hotel sliced and  
hotel rotated 90 degrees







Challenging search and rescue, because it involved many agencies (military, firefighters, police, carabinieri and forest rangers, mountain rescue, guardia di finanza, civil protection), with difficult coordination. More than 100 rescuers, many without beacon



Special intelligence tools (for now only used against terrorists) are also used to locate buried smartphones

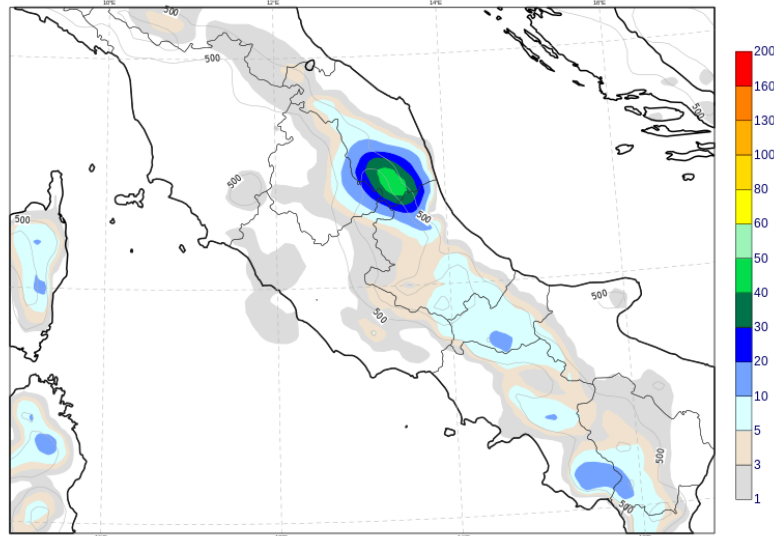




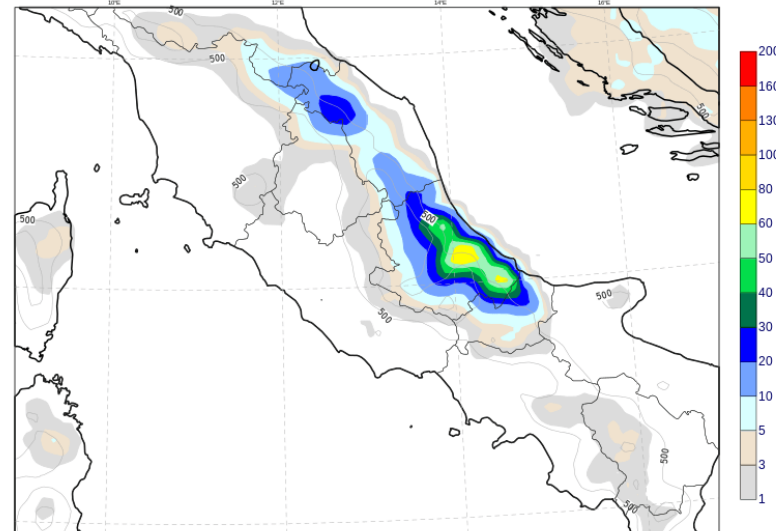
# Abruzzo – Appennini mountains: snowfall 16th - 19th January 2017

Mass of cold air at altitude. He reacted with the Adriatic Sea. It recalled, in the lower layers, currents from the southeast that are loaded moisture in the Adriatic Sea.

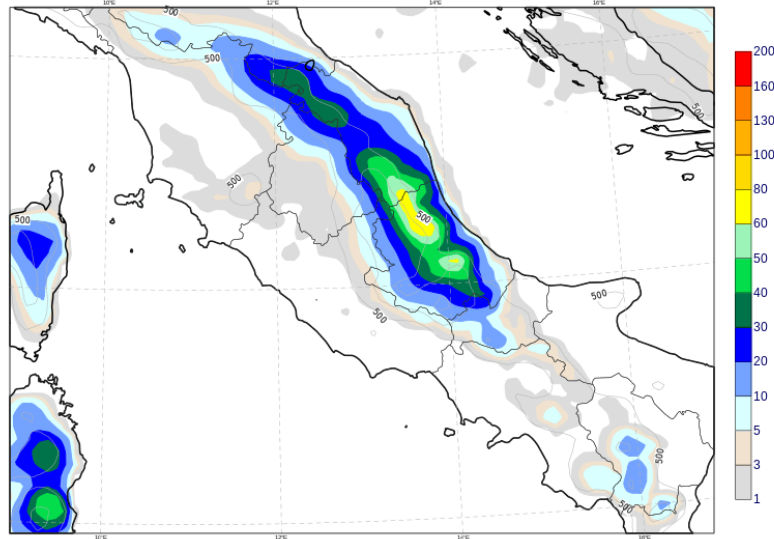
ECMWF fc for: **Monday 16 January 2017 ore 00** [+48]  
previous 24h Snowfall (mm eq) [Run: 00, Saturday 14 January 2017]



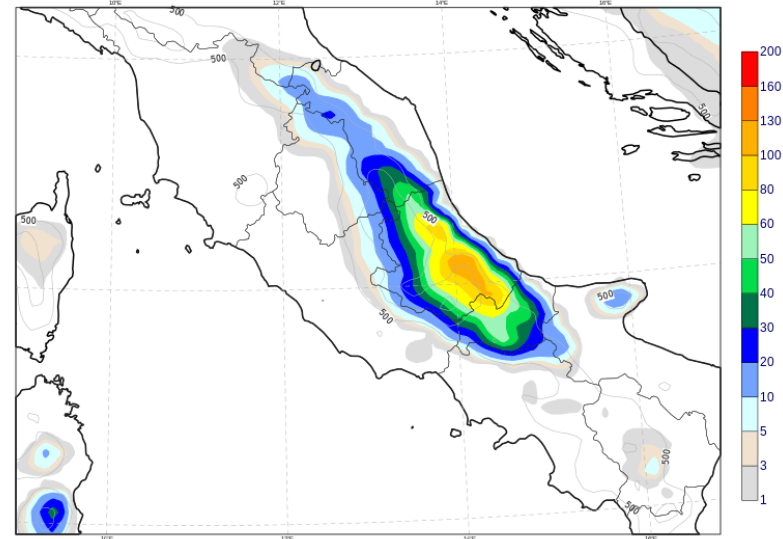
ECMWF fc for: **Tuesday 17 January 2017 ore 00** [+48]  
previous 24h Snowfall (mm eq) [Run: 00, Sunday 15 January 2017]



ECMWF fc for: **Wednesday 18 January 2017 ore 00** [+48]  
previous 24h Snowfall (mm eq) [Run: 00, Monday 16 January 2017]



ECMWF fc for: **Thursday 19 January 2017 ore 00** [+48]  
previous 24h Snowfall (mm eq) [Run: 00, Tuesday 17 January 2017]



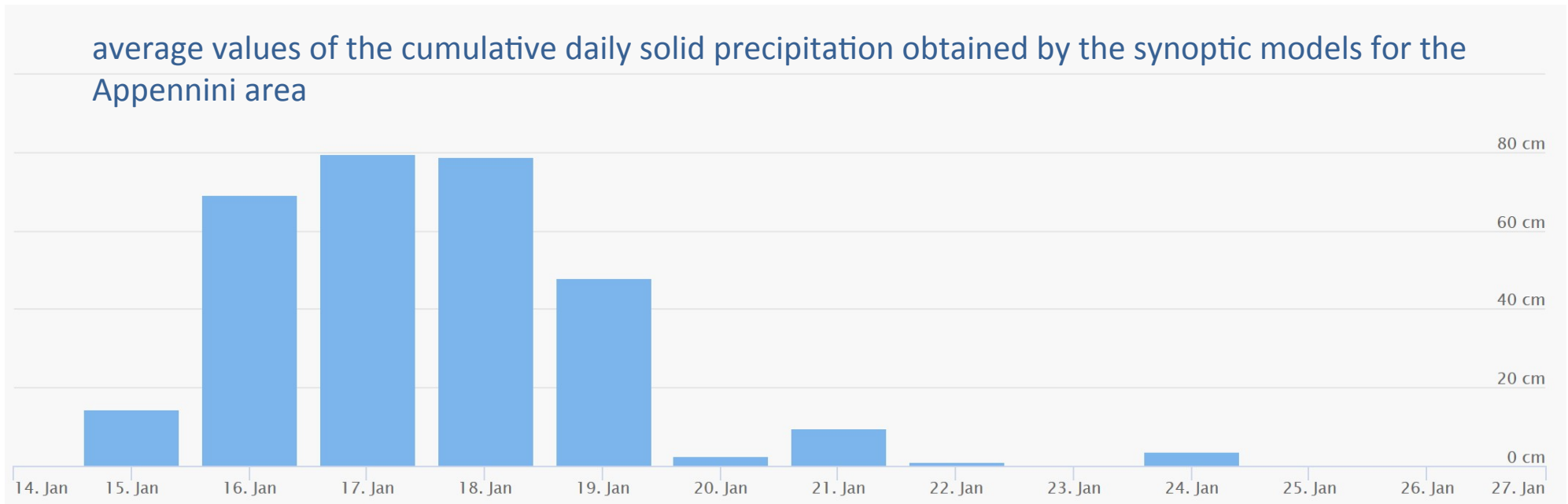


## Abruzzo – Appennini mountains

### Snow fall 16th - 19th January 2017

Big snowfall, but not unusal. Main difference: the typology of snow, very cold; avalanches with loose snow that can accelerate immediately and feed itself along the path.

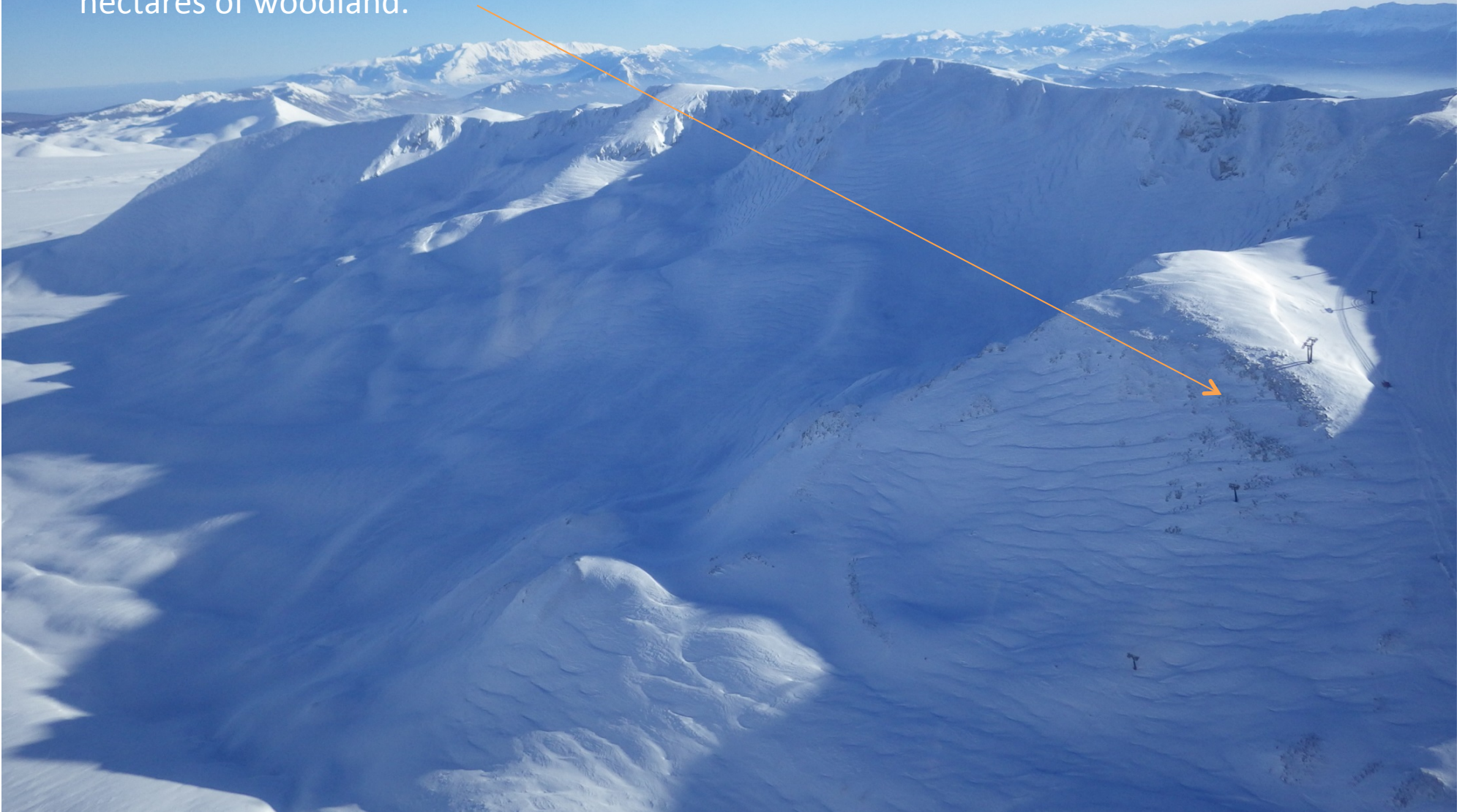
Significant snow cover even at low altitudes (up to 200 - 300 m slm).





Clash between two masses of air and orographic interaction. Result: snow dunes high 4 and 5 meters.

Campo Imperatore. Ski area closed. 8 big avalanches of which one has destroyed 15 hectares of woodland.



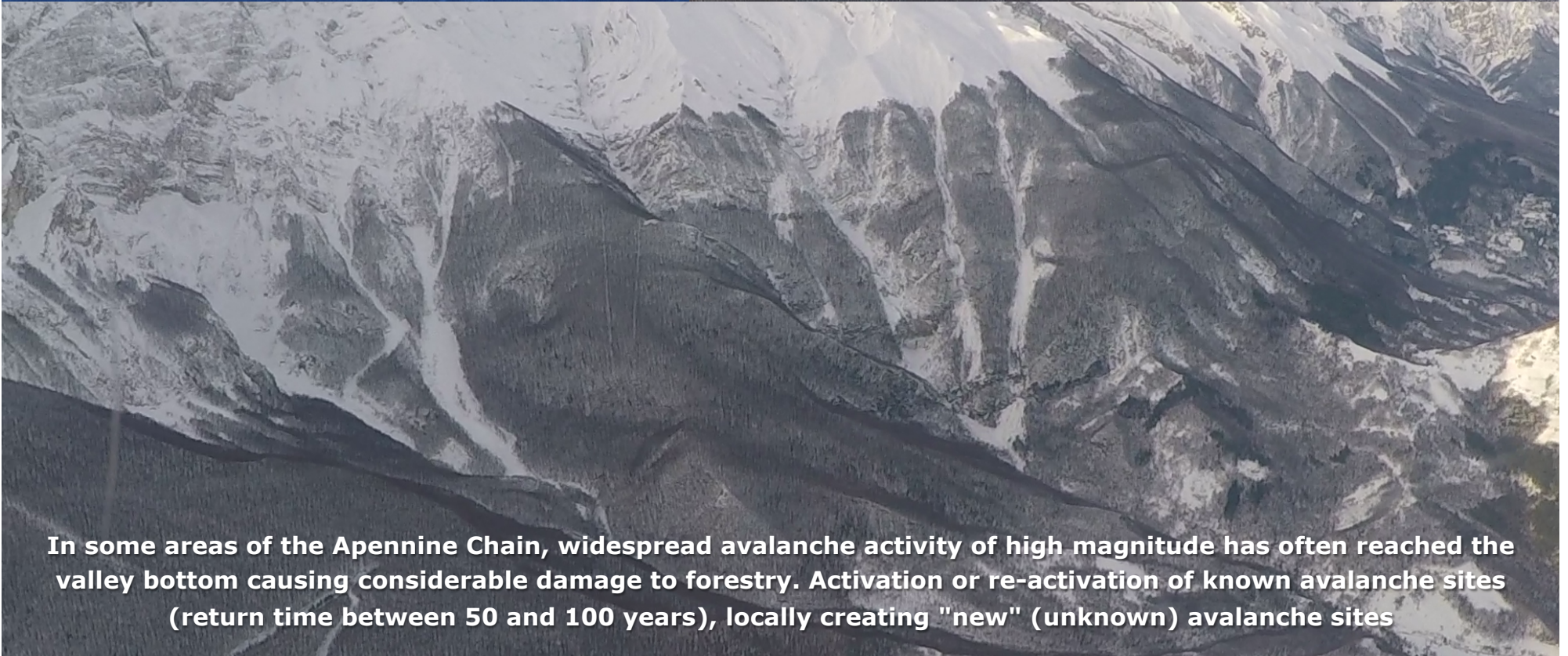
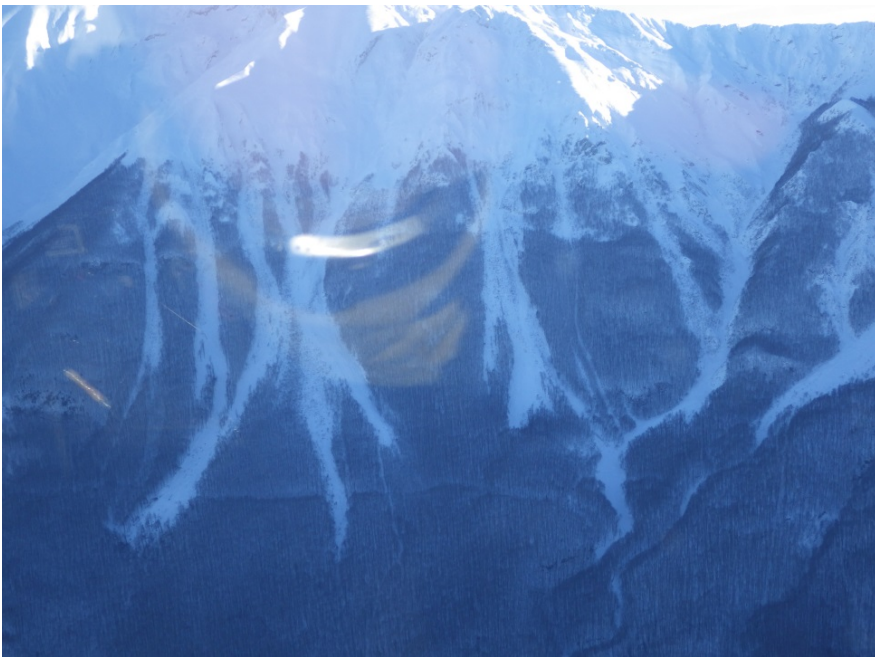




Prati di Tivo  
ski resort evacuated  
in time







**In some areas of the Apennine Chain, widespread avalanche activity of high magnitude has often reached the valley bottom causing considerable damage to forestry. Activation or re-activation of known avalanche sites (return time between 50 and 100 years), locally creating "new" (unknown) avalanche sites**



## PROBLEMS:

There are no data: in the period from 11 January to 1 February there is only one useful automatic station for the whole large area.

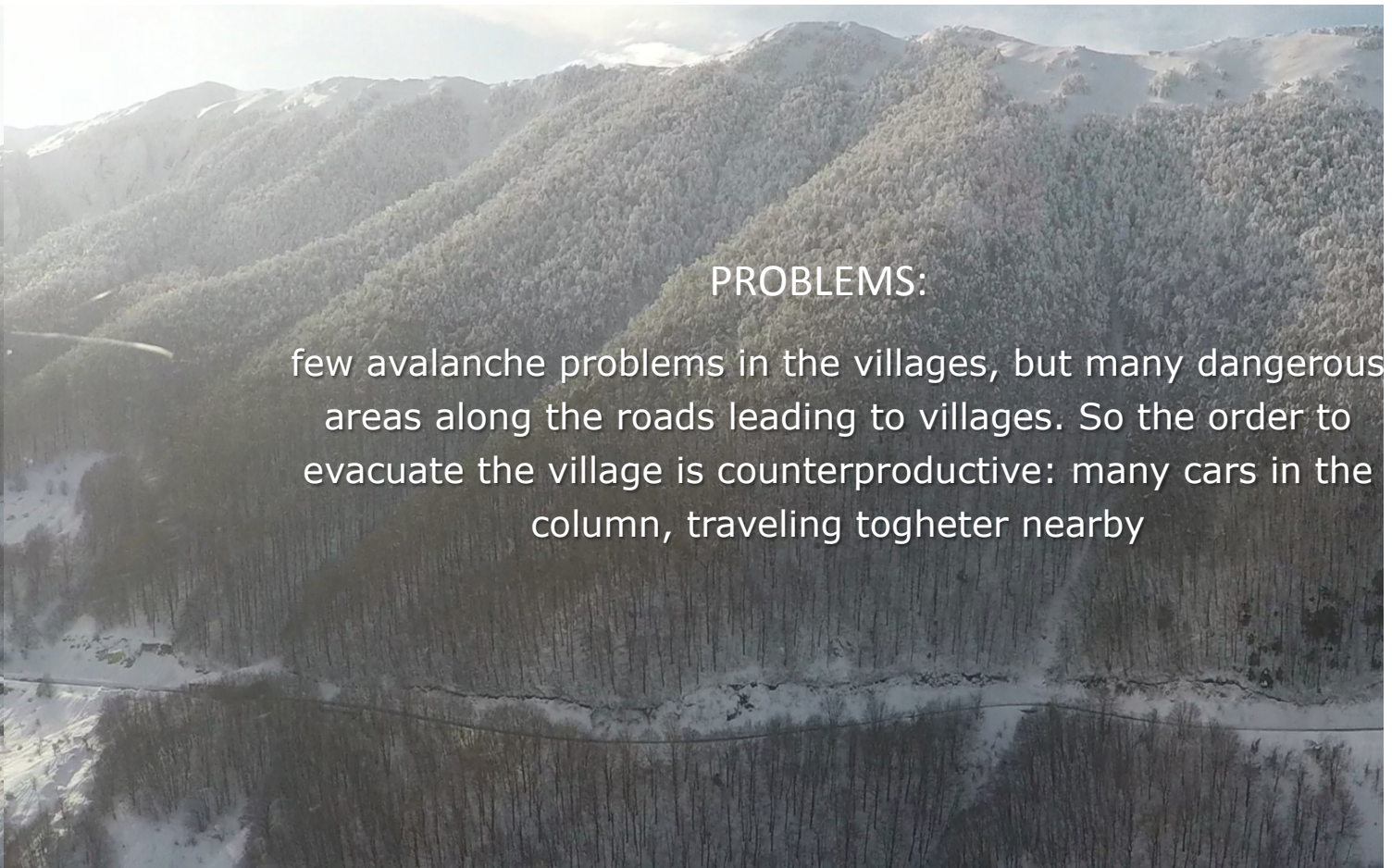
Still snowing and strong wind: other avalanches possible, but no visibility of the release areas.

Emergency managed with few or no available data



Rocky walls covered by  
drifted snow





## PROBLEMS:

few avalanche problems in the villages, but many dangerous areas along the roads leading to villages. So the order to evacuate the village is counterproductive: many cars in the column, traveling together nearby





## Problematic general context in the Abruzzo region

At 10.24, 11.14 and 11.25, then again at 14.34: four strong earthquake shots, all above magnitude 5, followed by other minor, over 100.

Some avalanches came down with the earthquake, but so many others do not.

300,000 people (159,000 electric utilities) without electricity: one quarter of the regional population.



Amatrice

