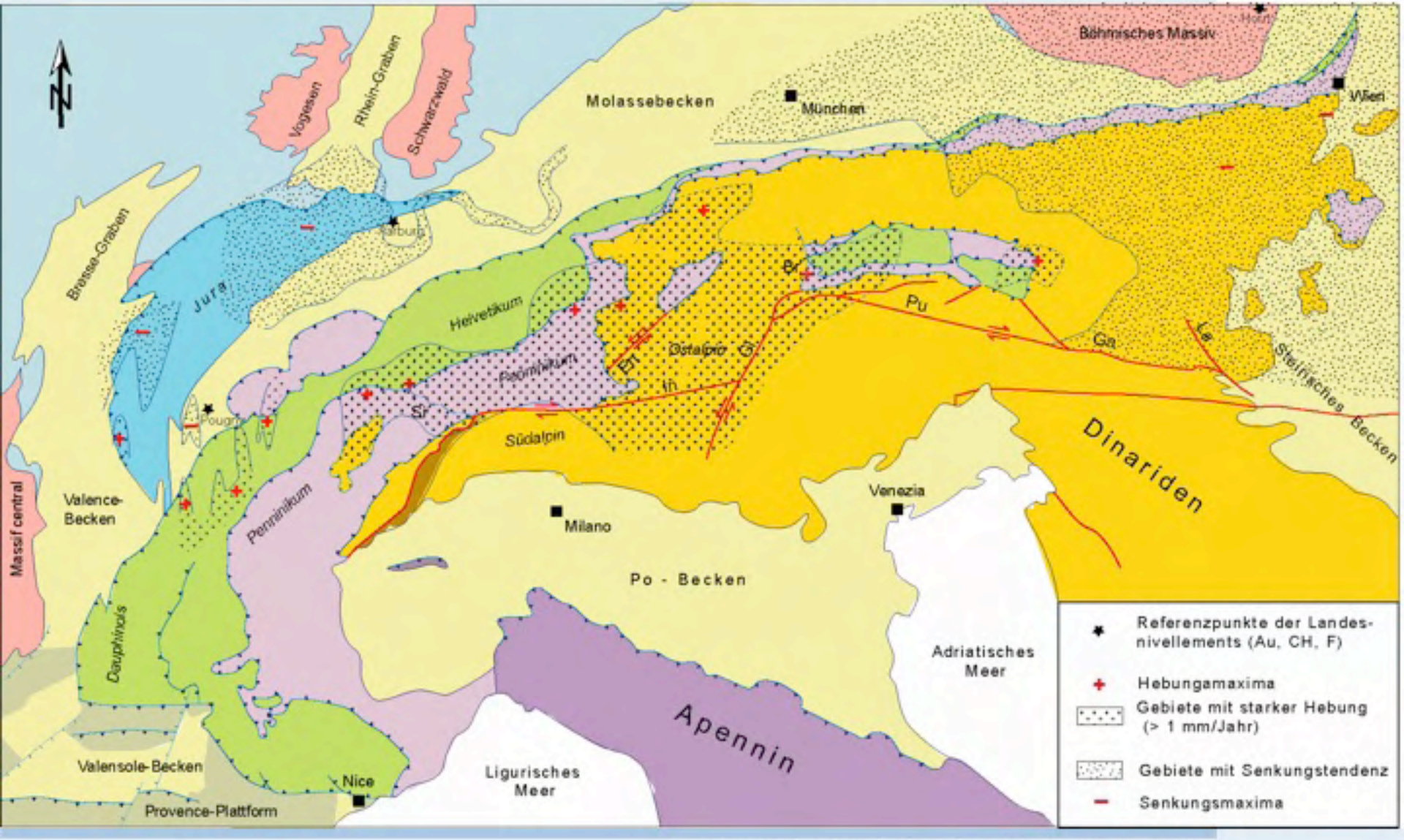
Neotektonik der Zentralalpen:

Hebungen, Abtrag und Bruchbildung seit dem Pliozän

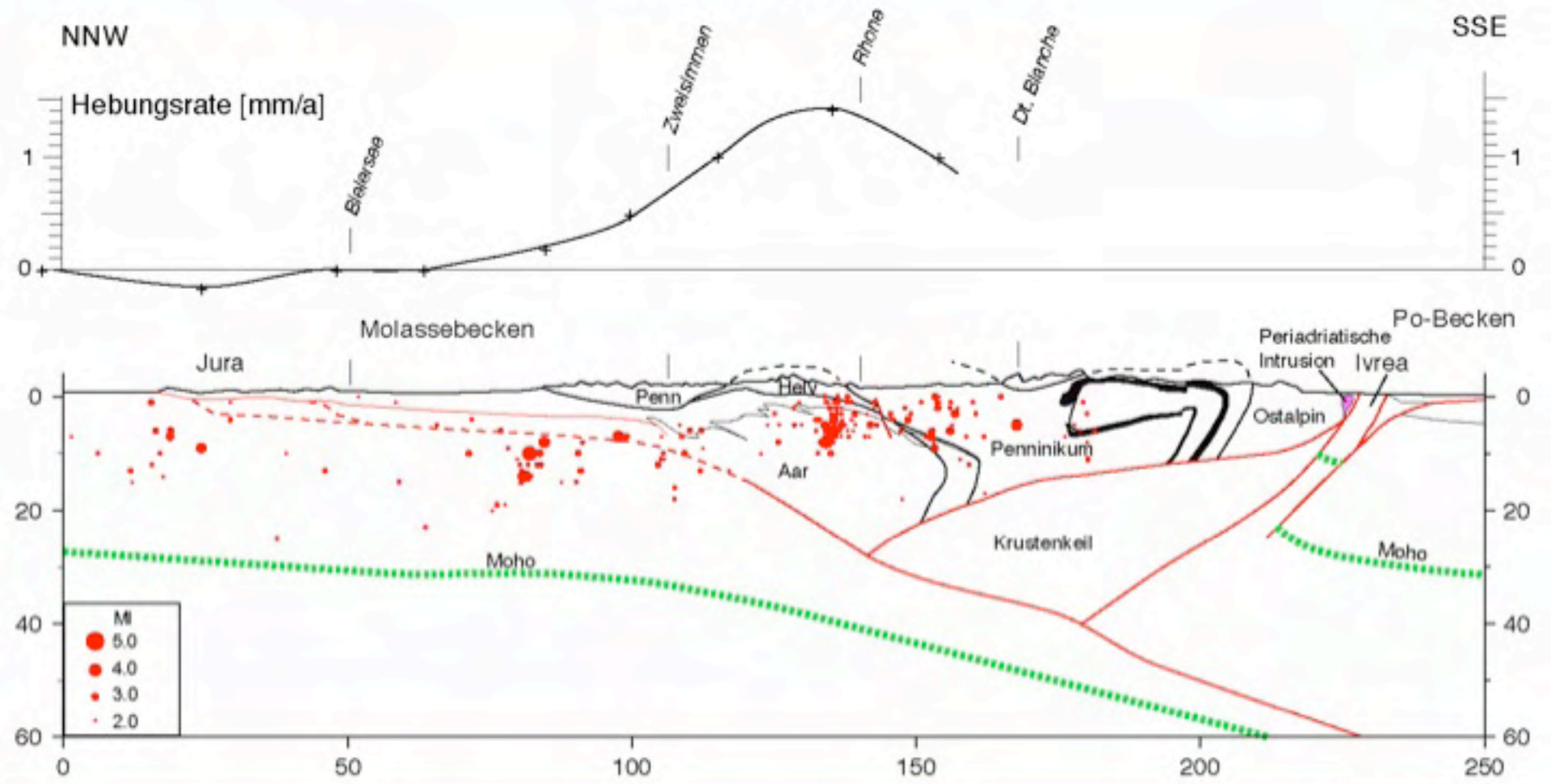
Prof. Dr. Adrian Pfiffner

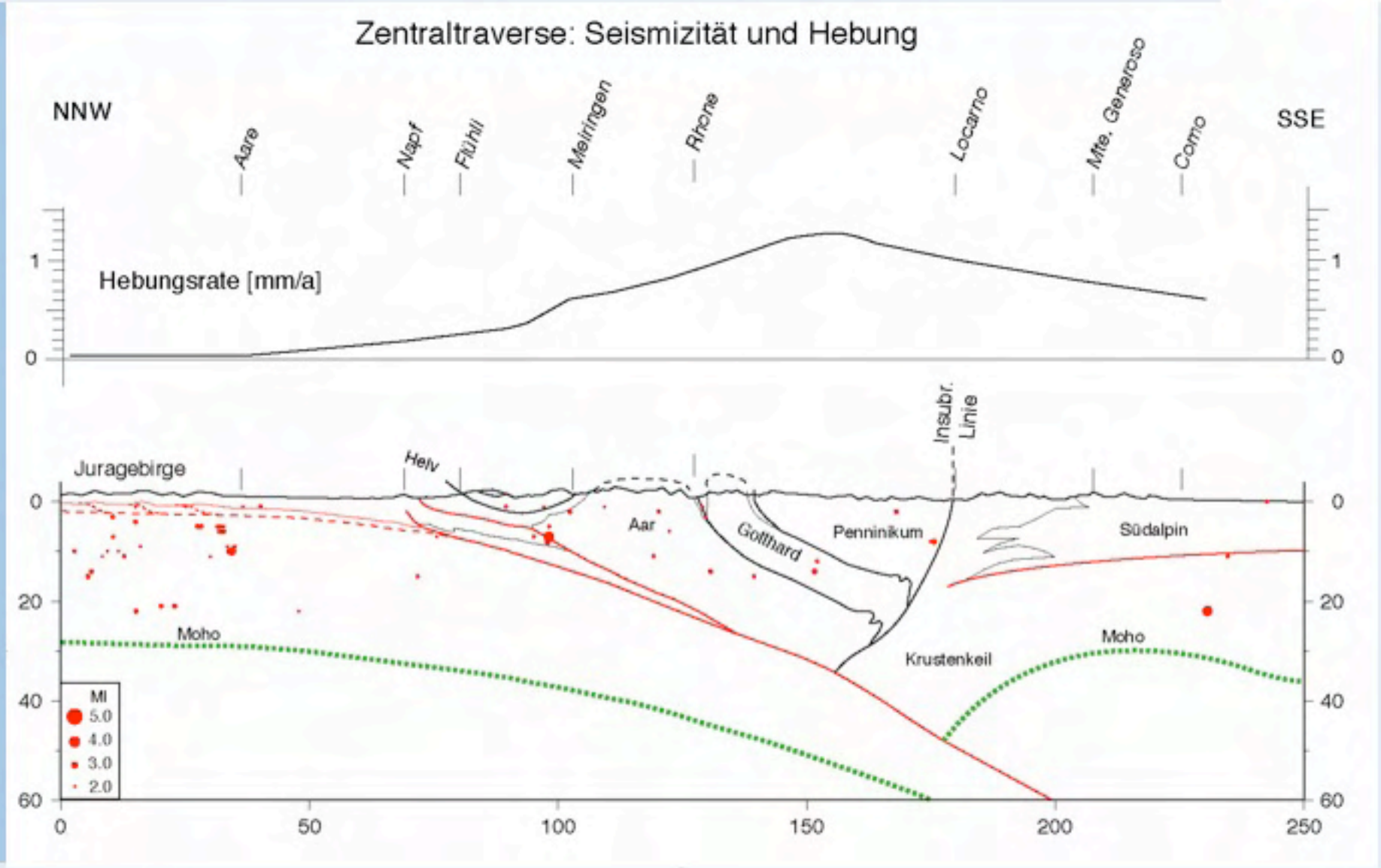
Hebungs- und Senkungsmuster



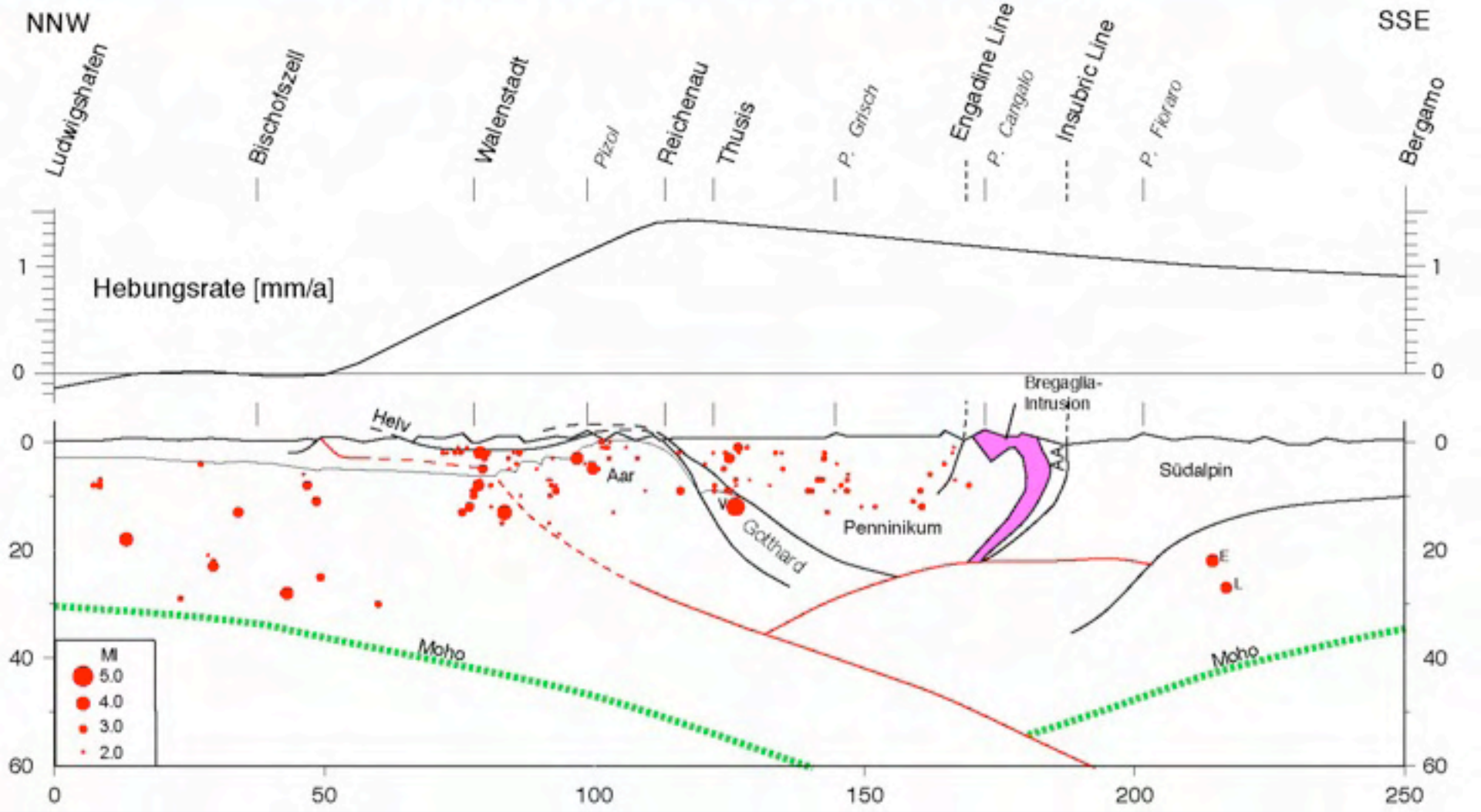
aus O.A. Pfiffner, 2009, Geologie der Alpen, UTB Haupt Verlag

Westtraverse

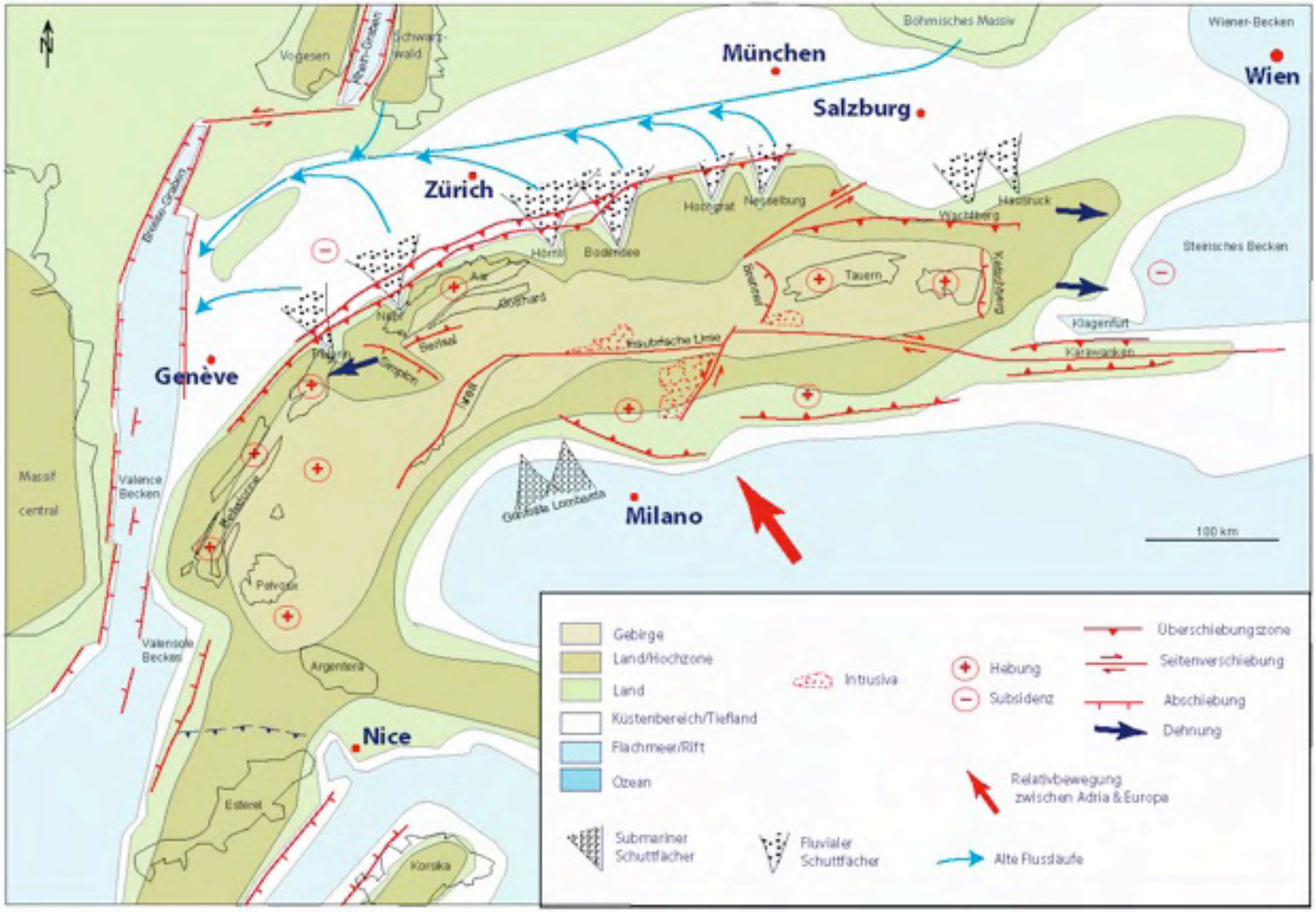



Zentraltraverse: Seismizität und Hebung
NNW
SSE
Aare
Napf
Flühli
Meiringen
Rhone
Locarno
Mte. Generoso
Como
Hebungsrate [mm/a]
1
0
Insubr. Linie
Juragebirge
Helv
Aar
Gotthard
Penninikum
Südalpin
Moho
Krustenkeil
Moho
MI
5.0
4.0
3.0
2.0
0
20
40
60
0
50
100
150
200
250

Osttraverse: Seismizität und Hebung

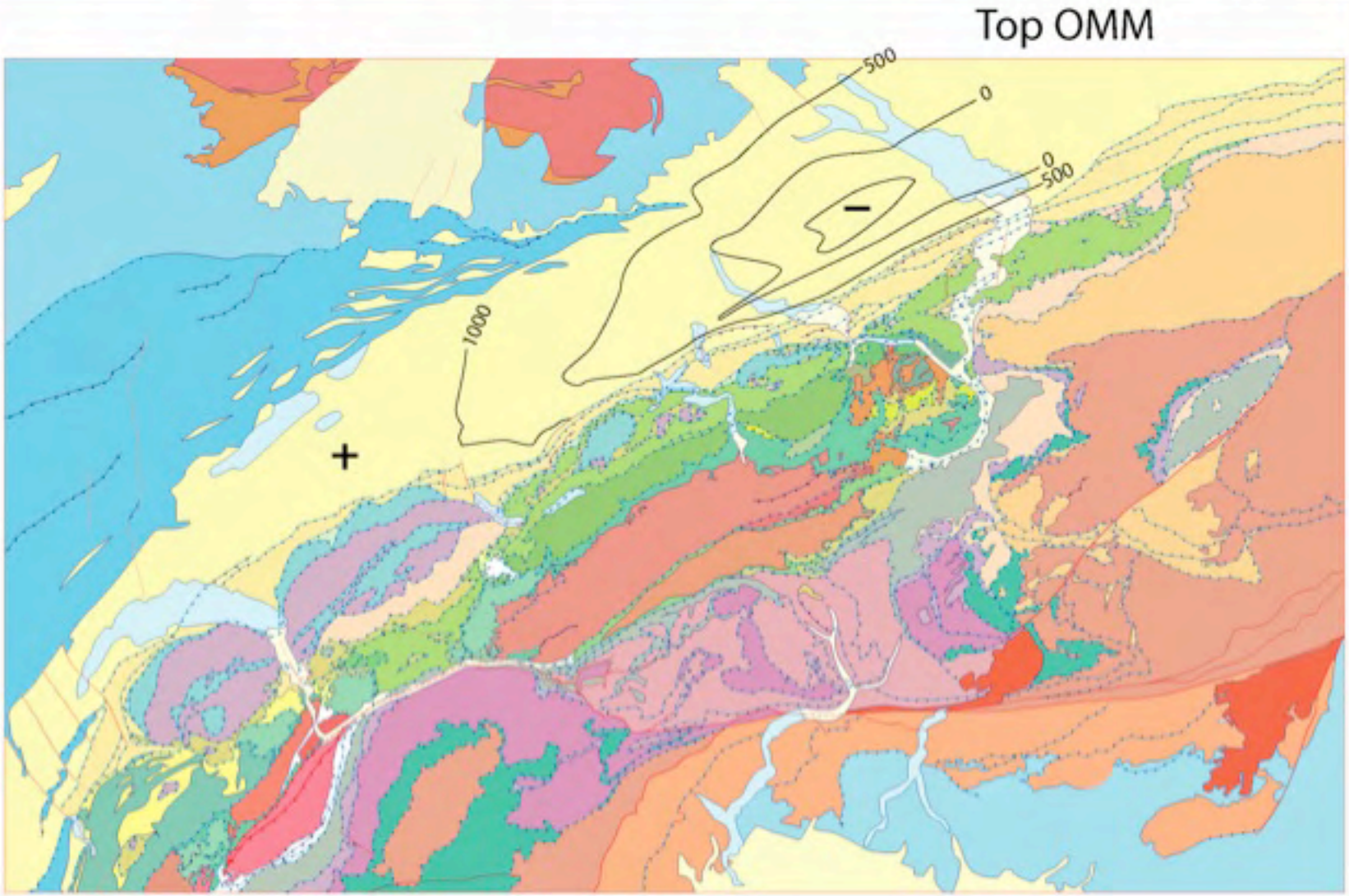


Paläogeographische Karte OSM (15 Mio J)

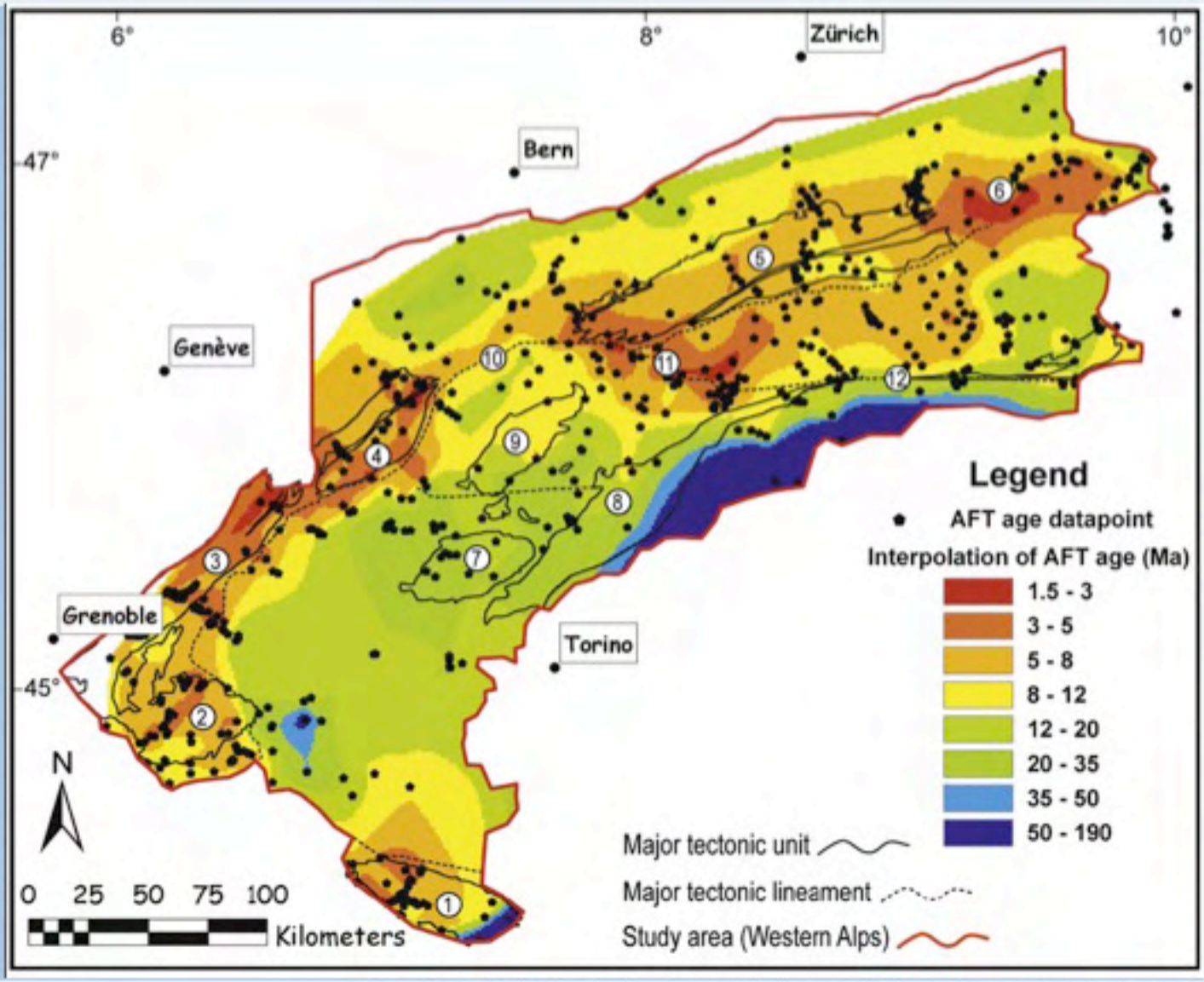


aus O.A. Pfiffner, 2009, Geologie der Alpen, UTB Haupt Verlag

Hebung und Senkung im Vorland seit dem Burdigalian (16 Mio J)

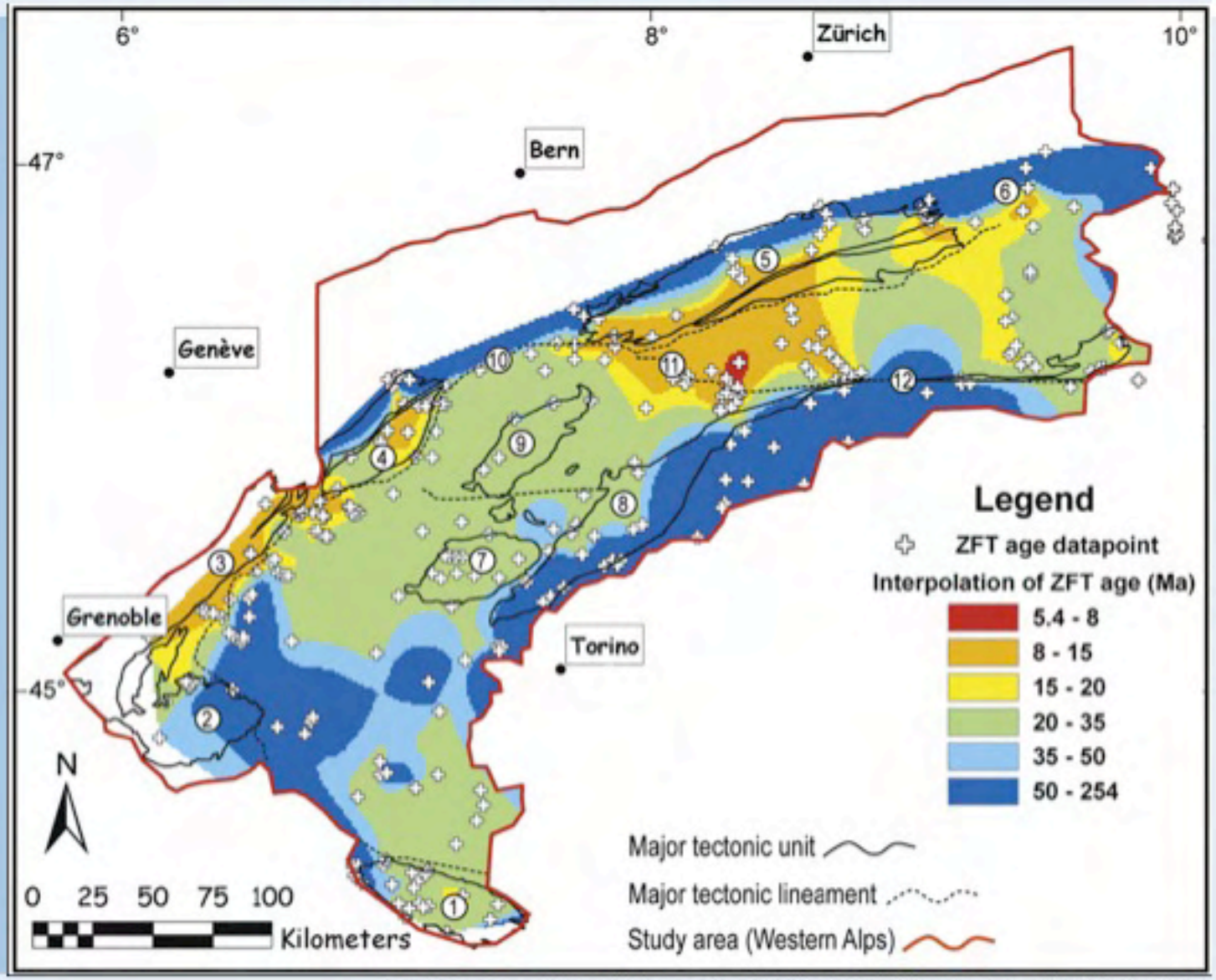


Apatit-Spaltspuralter



aus Vernon, A.J., van der Beek, P.A., Sinclair, H.D. & Rahn, M.K., 2008, EPSL 270

Zirkon-Spaltspuralter

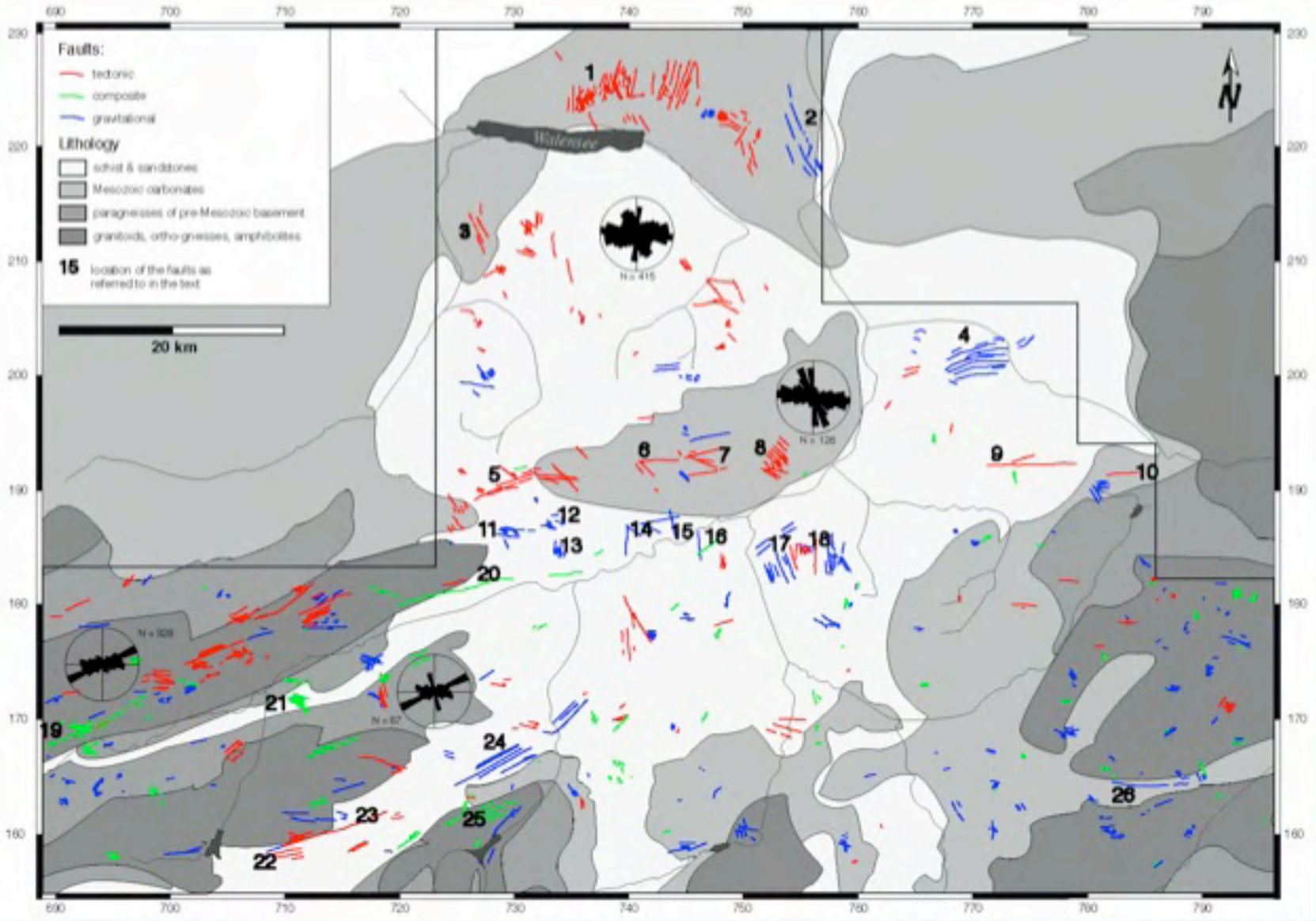


aus Vernon, A.J., van der Beek, P.A., Sinclair, H.D. & Rahn, M.K., 2008, EPSL 270

Val Bedretto

Uphill facing scarps mit versetzer Seitenmoräne in der Bildmitte

Versetzte Seitenmoräne S Oberwald (VS); Ustaszewski, M. & Pfiffner, O.A., 2008, Geol Soc London Spec Publ. 298



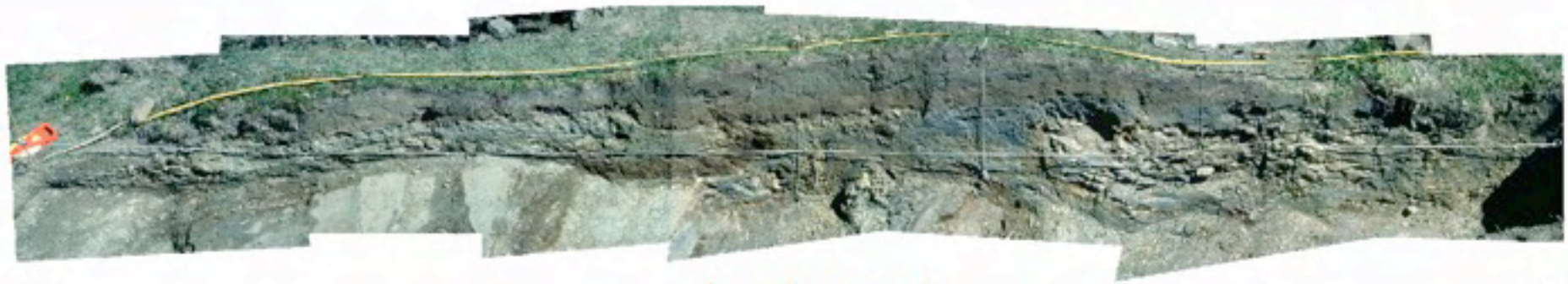
Modifiziert nach Persaud, M. & Pfiffner, O.A., 2004, Tectonophysics 385

Arflina

-> West

S N

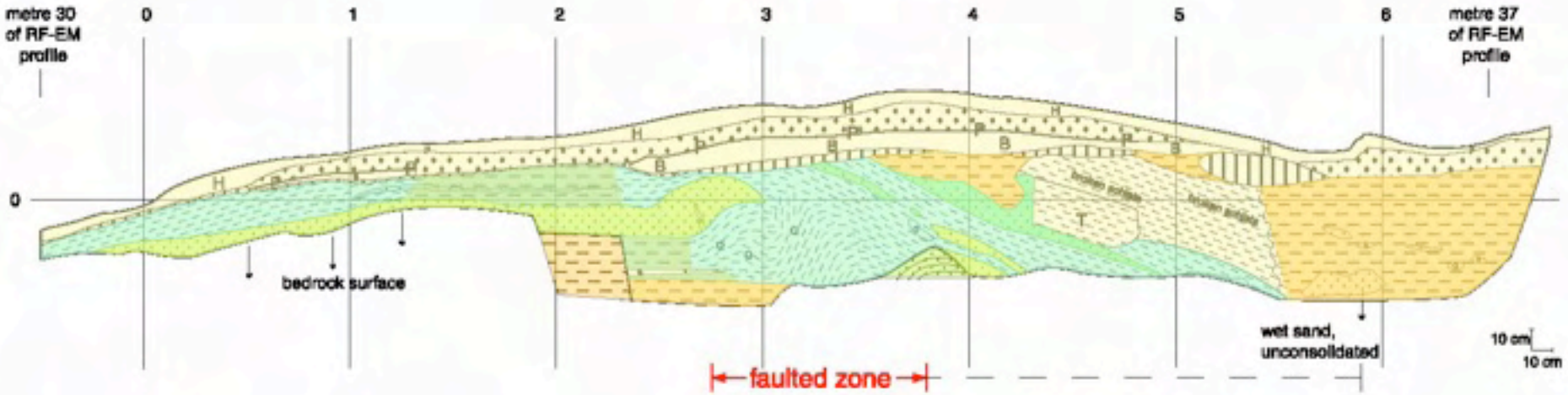
N S -> Ost



N

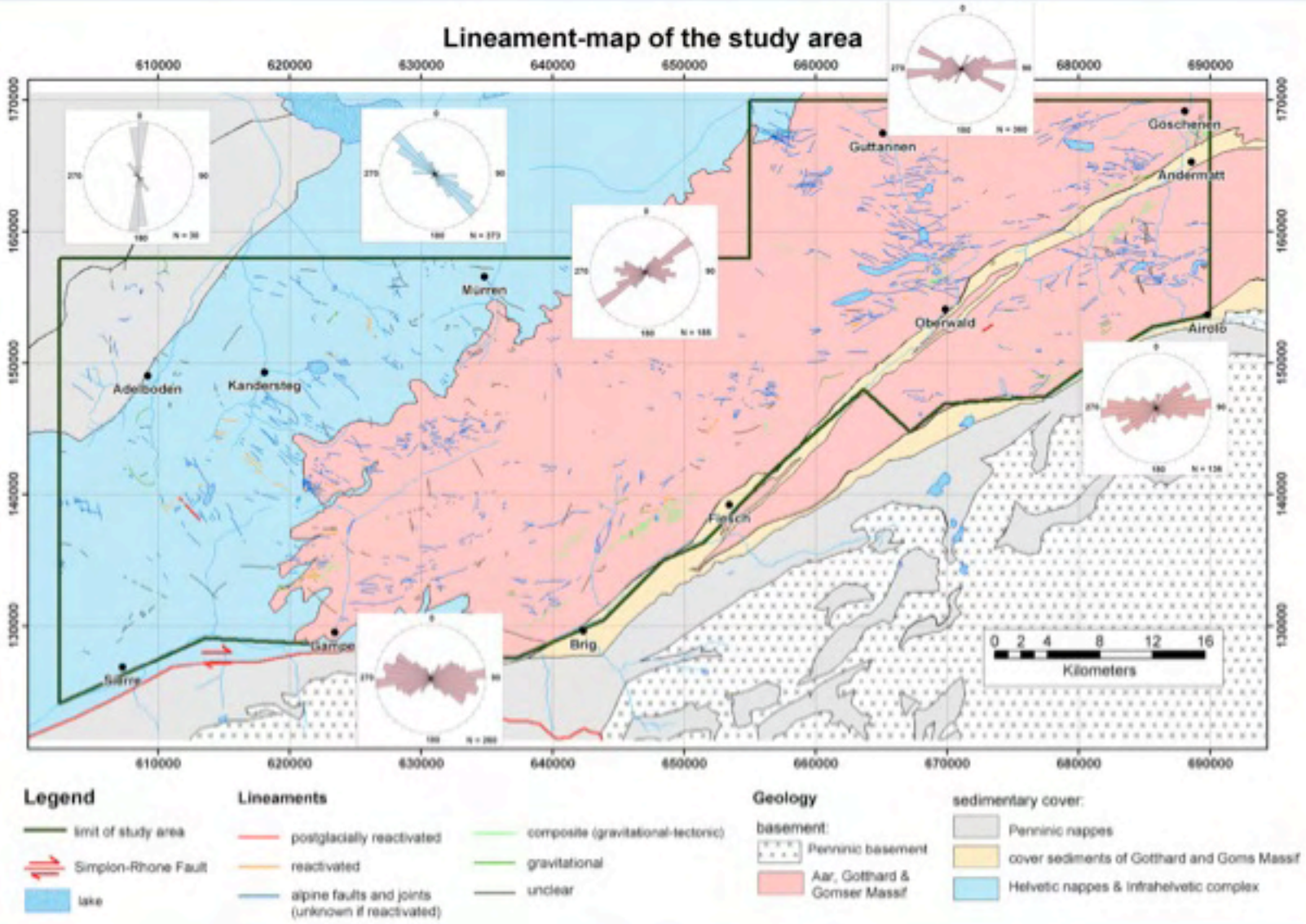
faulted zone

S



H 1st humus horizon
grey soil horizon, stony
P 2nd humus horizon
B beige soil horizon, sandy
S boulders
regolith, broken schists
rusty, brown sandstone
T grey schists, solid
weathered grey & brown schists, plastic clay
Q quartz-rich zone

Modifiziert nach Persaud, M., 2002, unpubl. PhD thesis Univerität Bern



aus Ustaszewski, M. & Pfiffner, O.A., 2008, Geol Soc London Spec Publ. 298

Gemmi-Bruch

Versetzter Moränenschleier

E

W

UNIVERSITÄT BERN

Gemmi Bruch

Detail

W

E

Gemmi Bruch

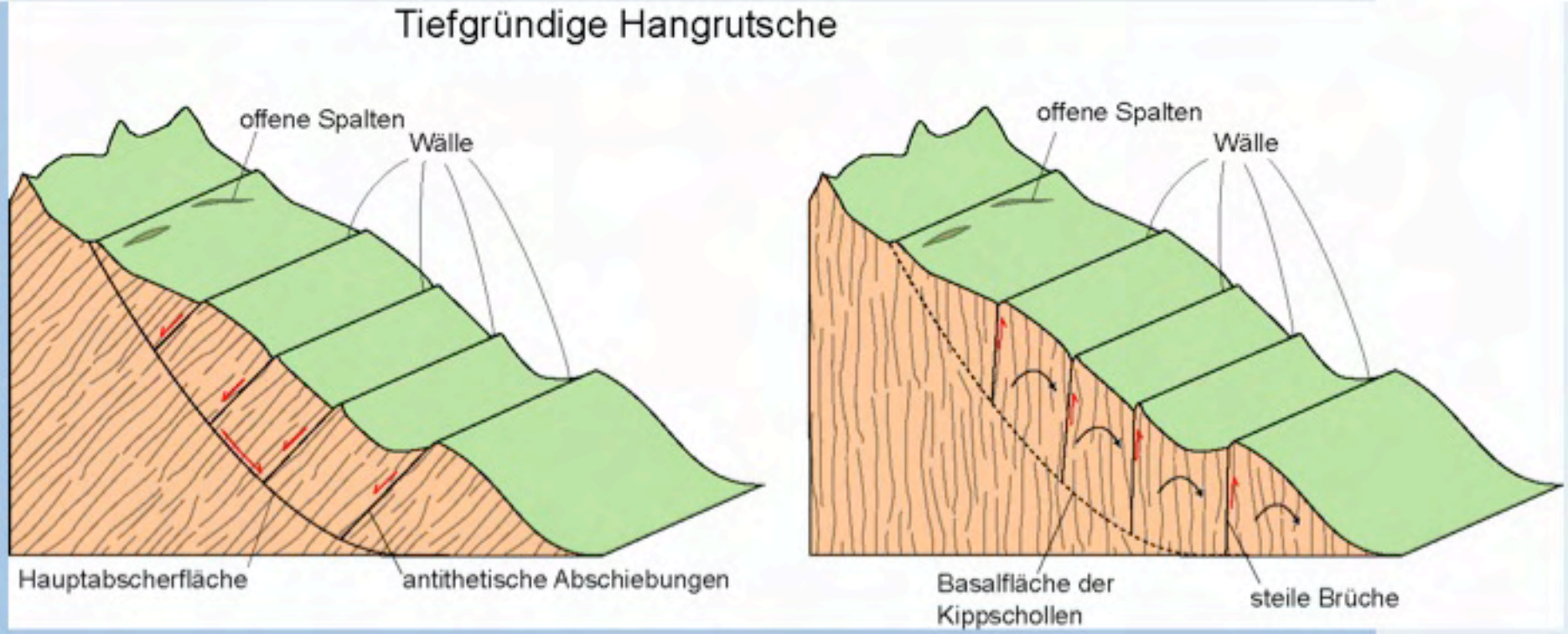
UNIVERSITÄT BERN

Detail

Gemmi Bruch Detail:
Alpin angelegte
Bruchbrekzie mit
Calcit verheilt

Gemmi Bruch Detail: versetzte Karstform

Gemmi Bruch: Schlitz

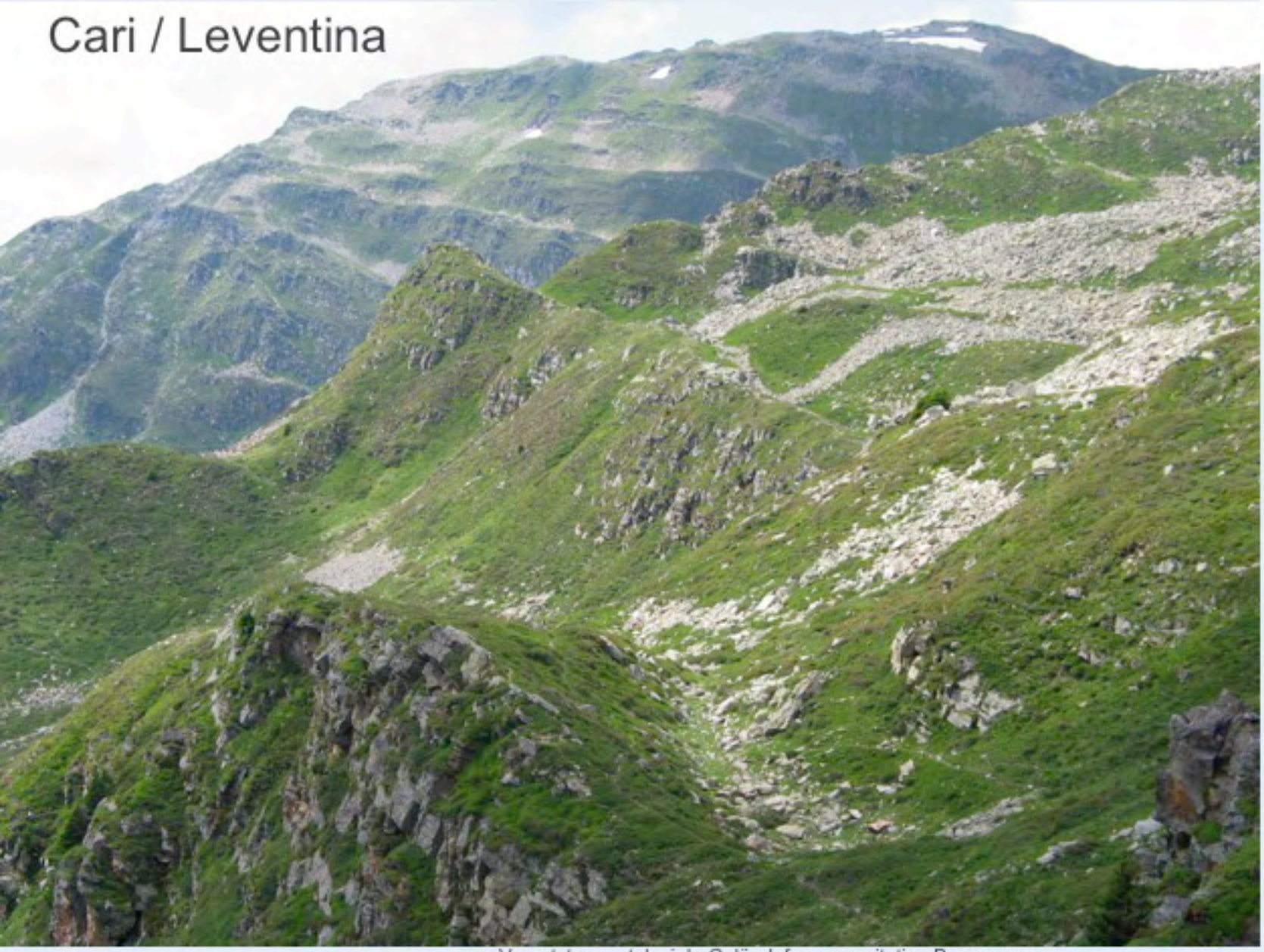


DSSD (Deep Seated Slope Deformations)

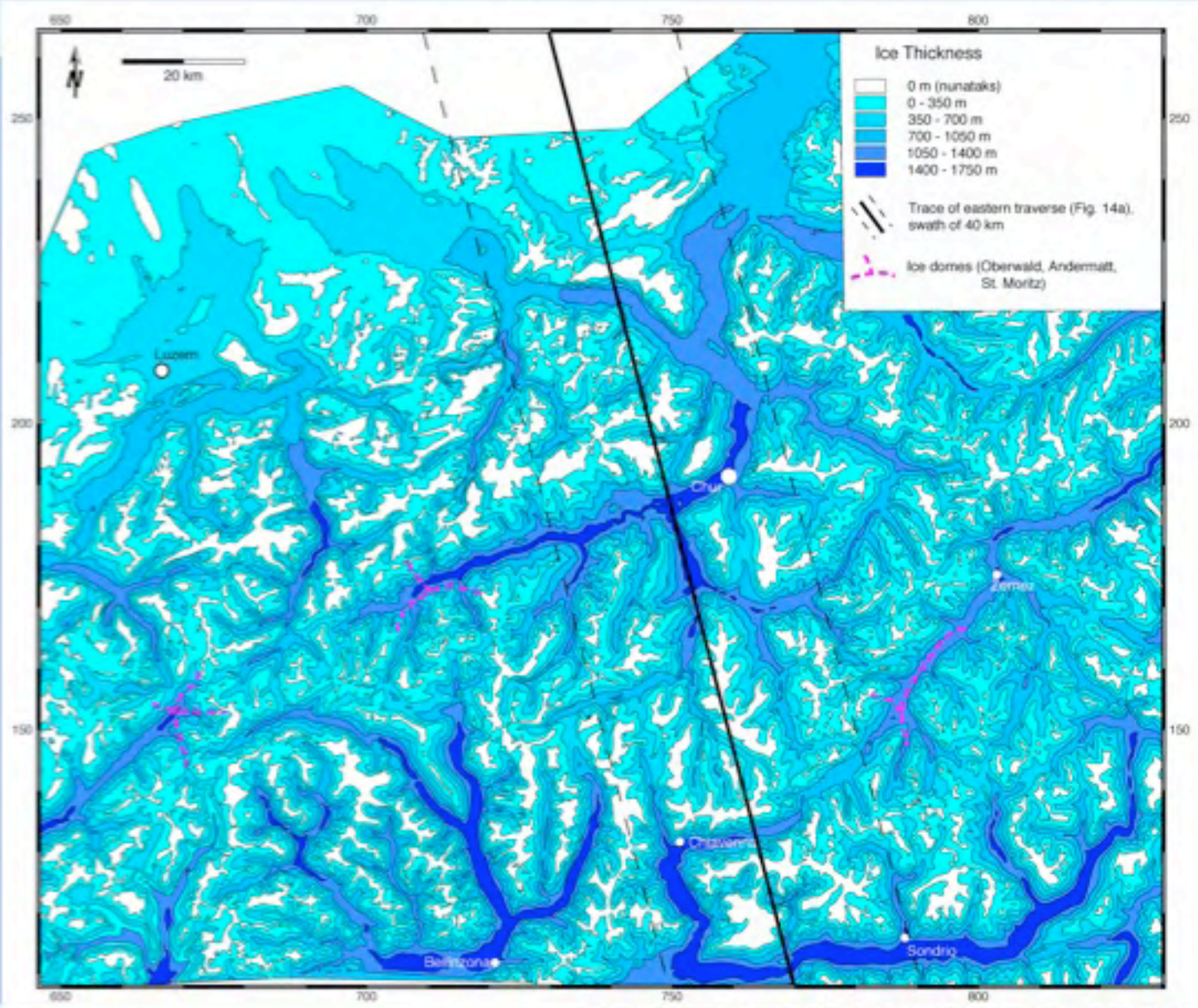
aus O.A. Pfiffner, 2009, Geologie der Alpen, UTB Haupt Verlag

Versetzter postglazialer Gehängeschutt; gravitative Bewegung

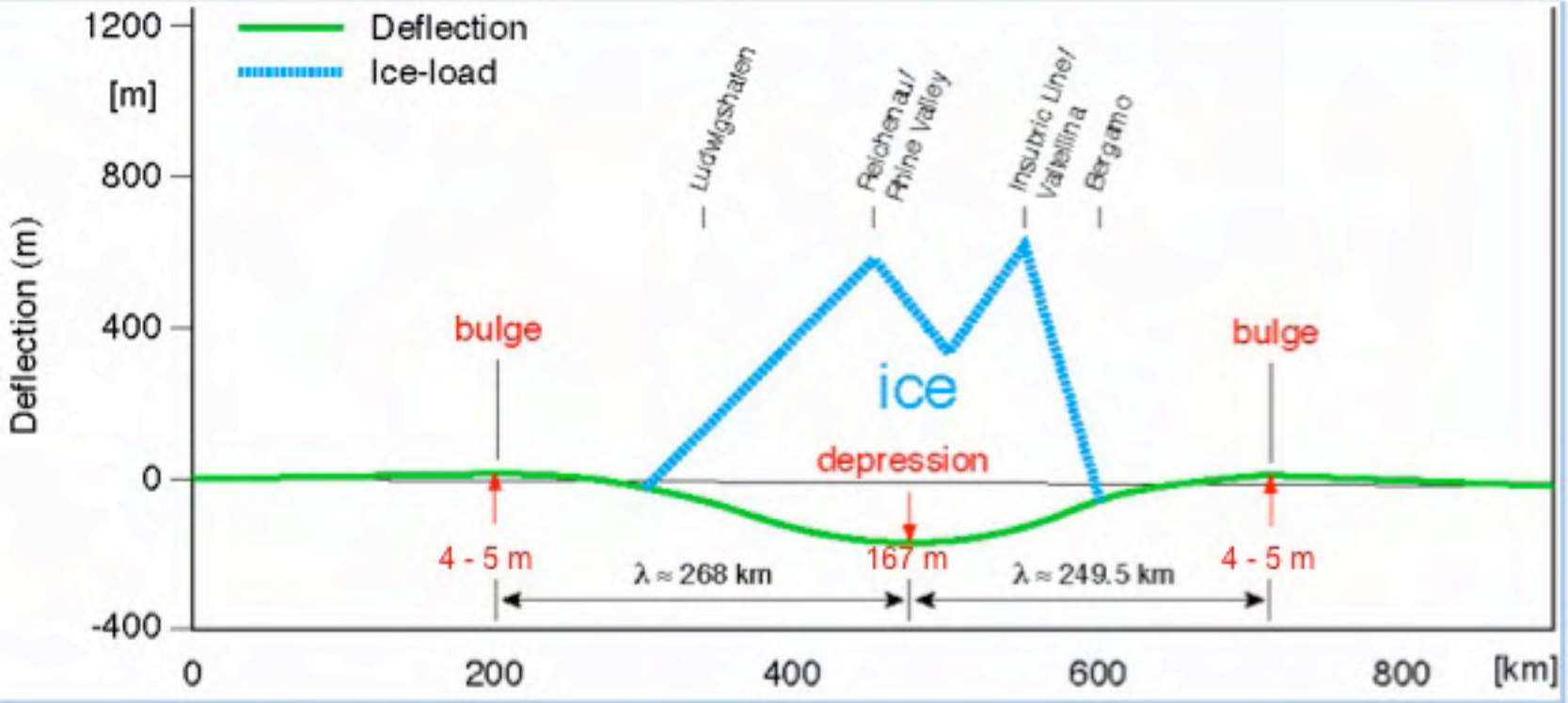
Cari / Leventina



Versetzter postglaziale Geländeform; gravitative Bewegung



Nach Persaud, M. & Pfiffner, O.A., 2004, Tectonophysics 385



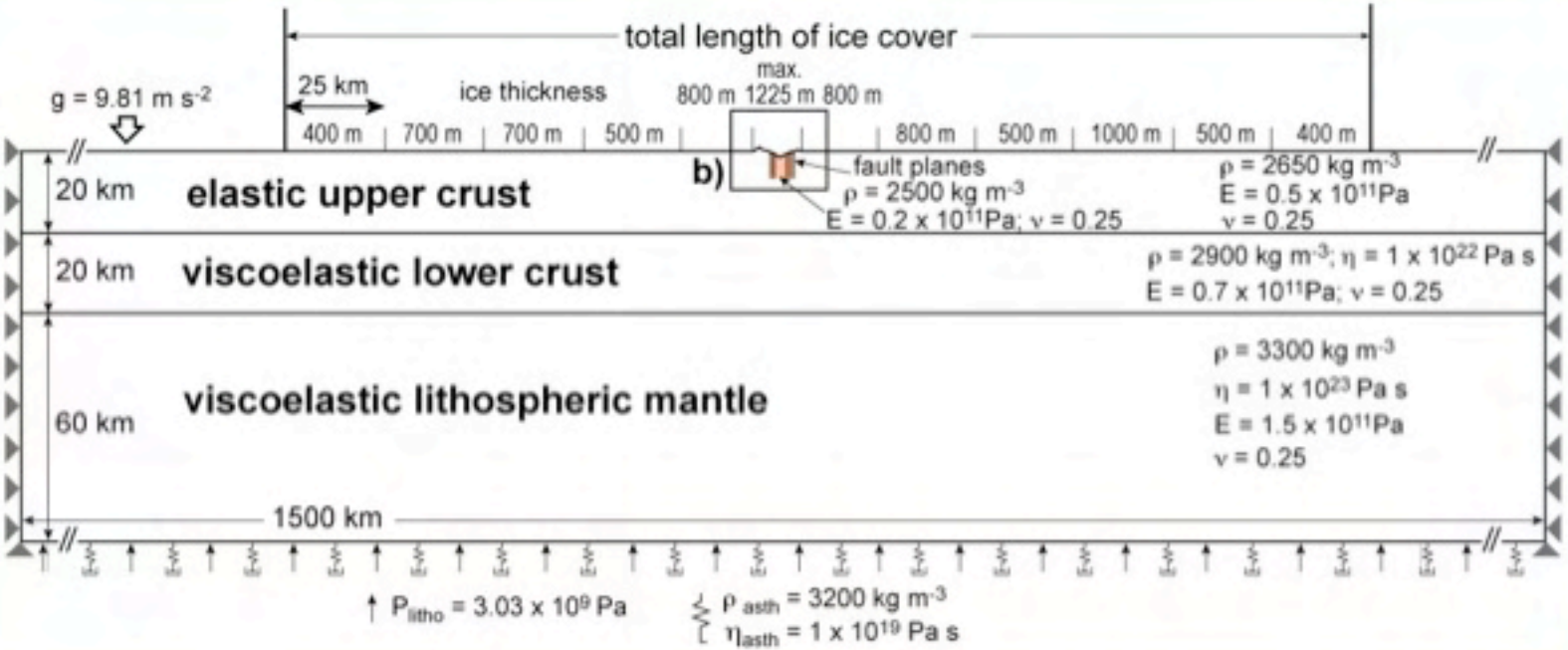
$\rho_{Eis} = 0.85\ g/cm^3$

$\rho_{Mantel} = 3.25\ g/cm^3$

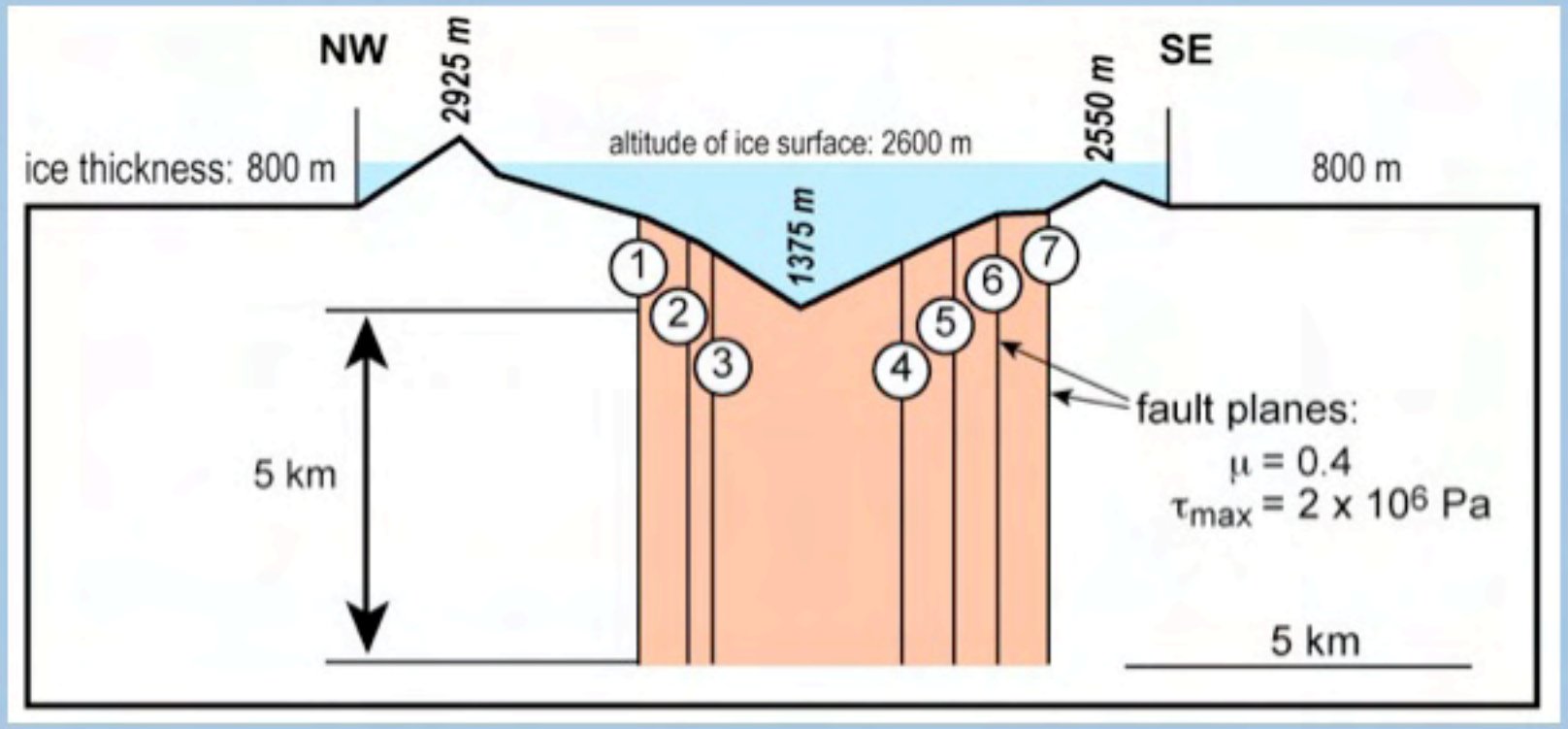
effective elastic thickness

$L_{eE} = 25\ km$

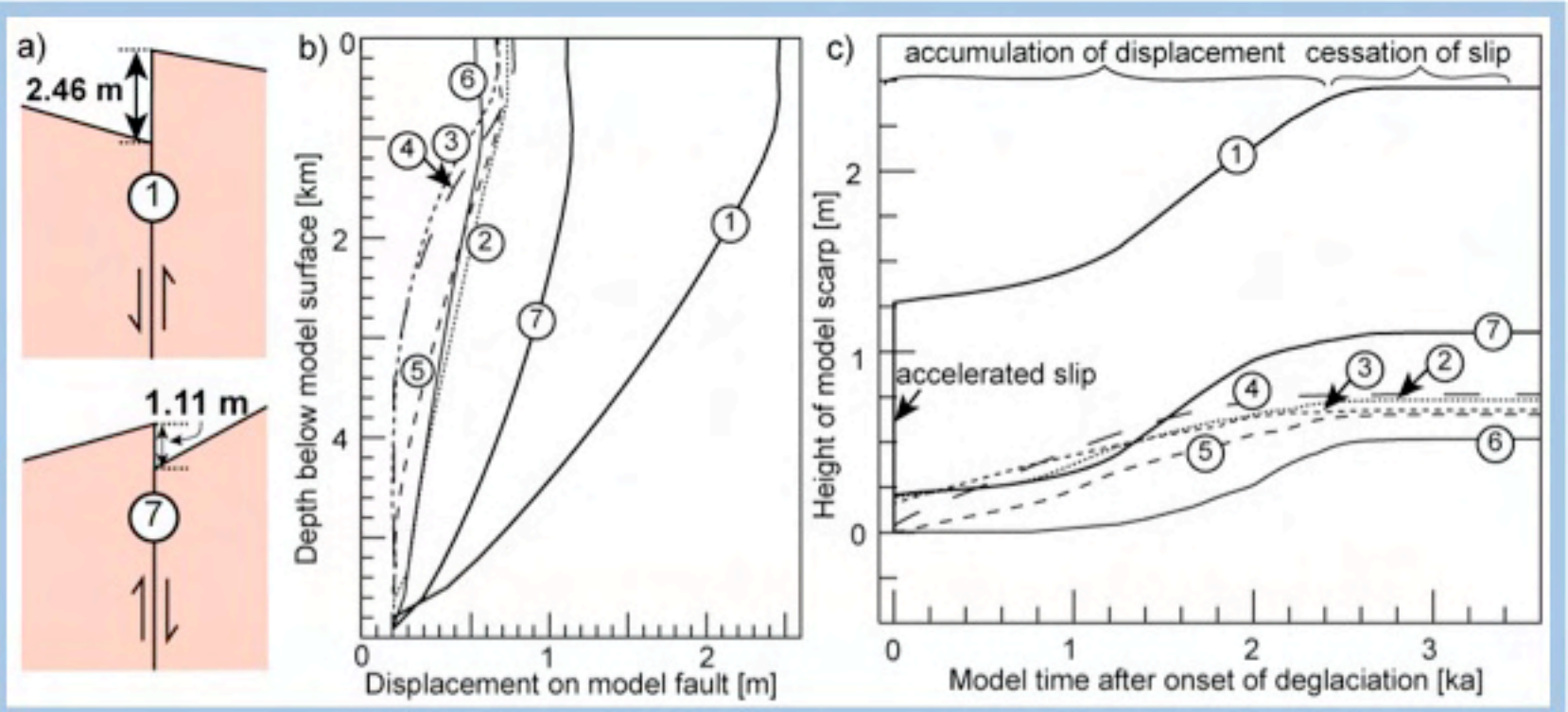
Nach Persaud, M. & Pfiffner, O.A., 2004, Tectonophysics 385



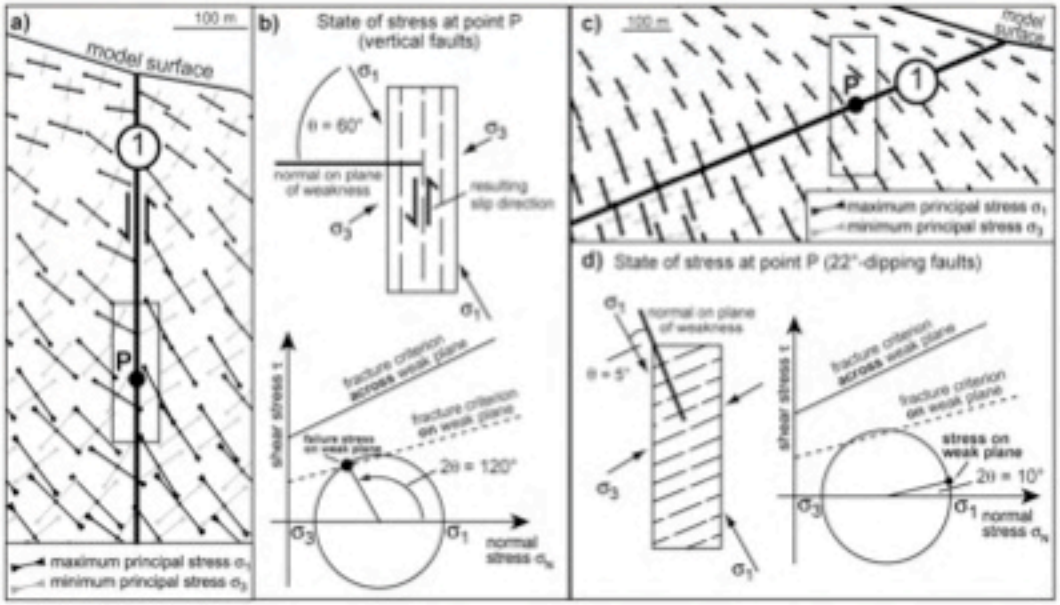
Nach Ustaszewski, M., Hampel, A. & Pfiffner, O.A., 2008, Swiss J Geosci. 101/1



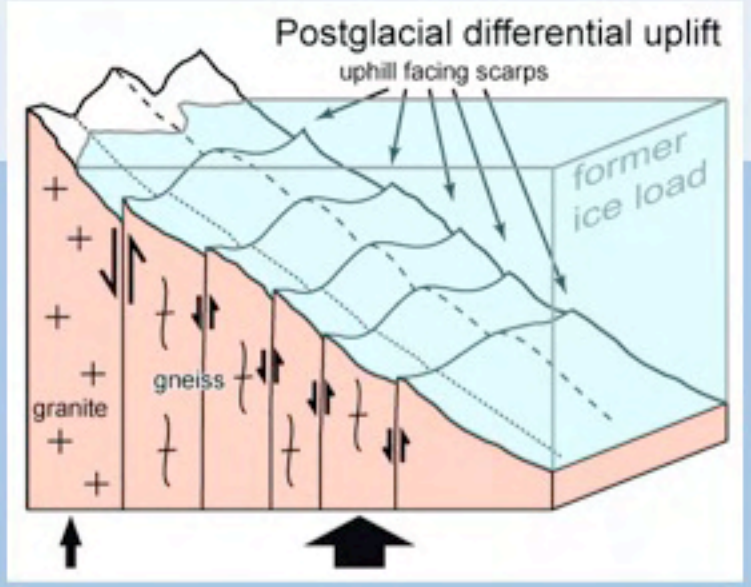
Nach Ustaszewski, M., Hampel, A. & Pfiffner, O.A., 2008, Swiss J Geosci. 101/1

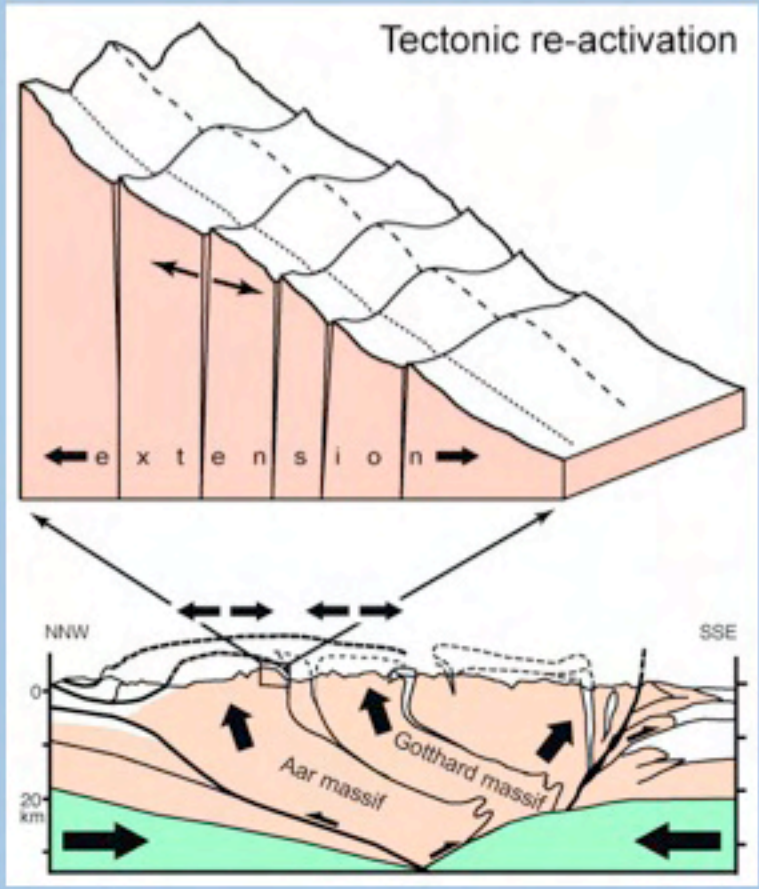


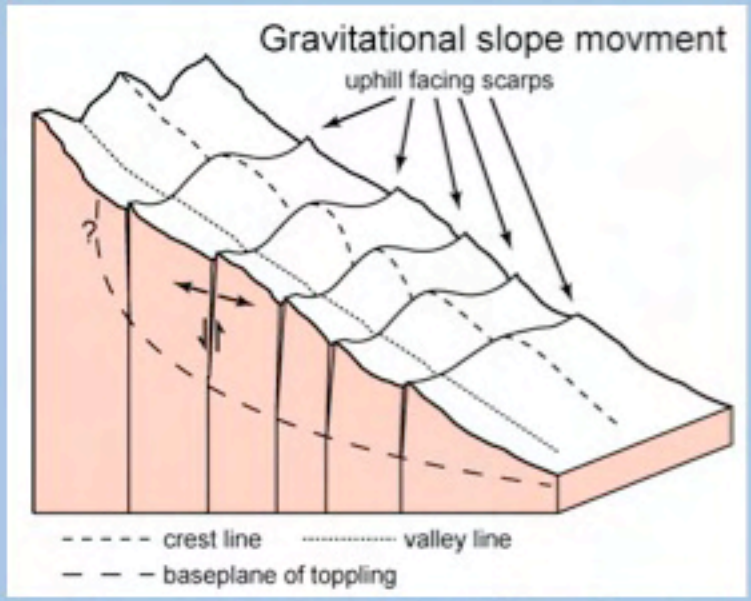
Nach Ustaszewski, M., Hampel, A. & Pfiffner, O.A., 2008, Swiss J Geosci. 101/1



Nach Ustaszewski, M., Hampel, A. & Pfiffner, O.A., 2008, Swiss J Geosci. 101/1

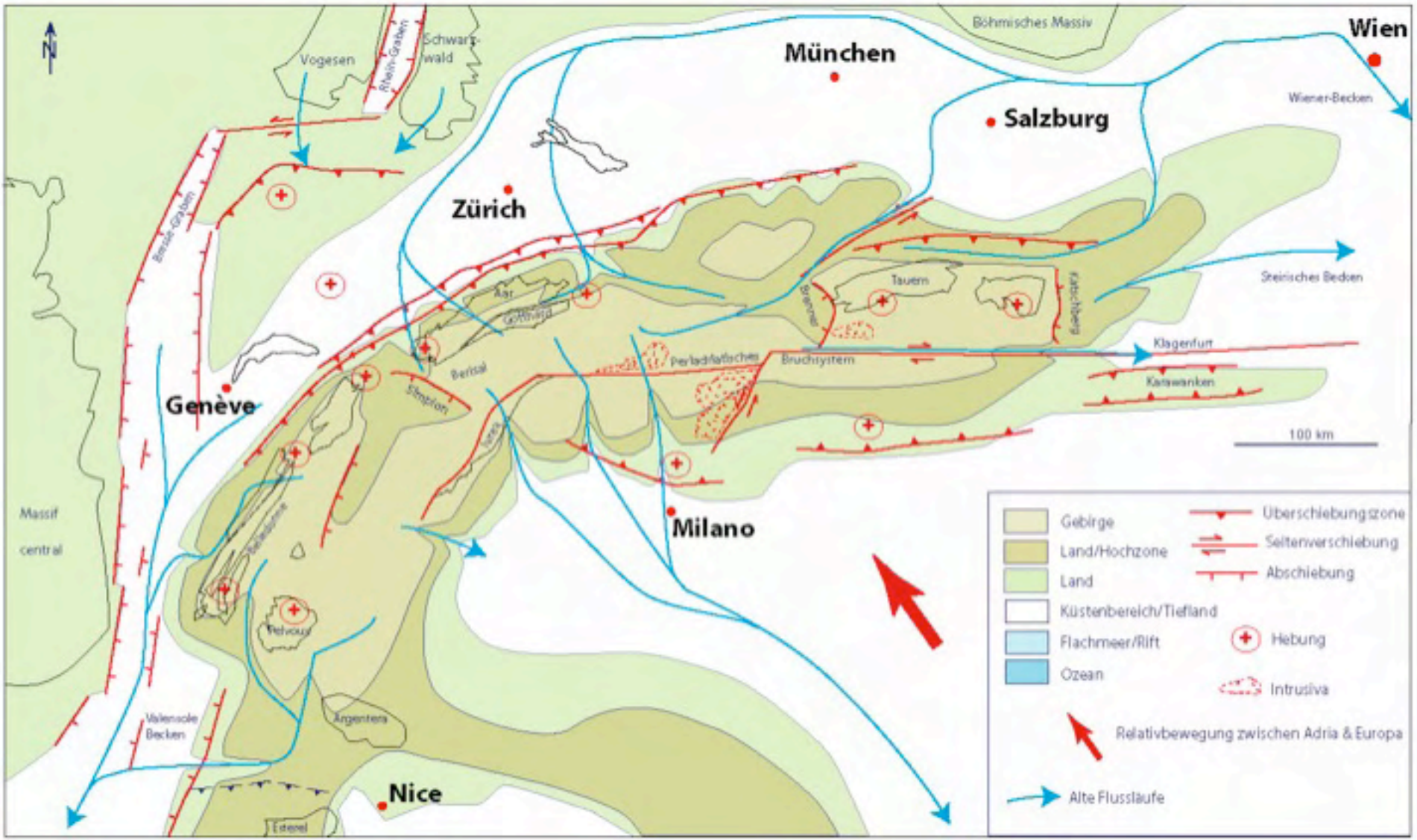






Nach Ustaszewski, M., Hampel, A. & Pfiffner, O.A., 2008, Swiss J Geosci. 101/1

Paläogeographische Karte Messinian (6 Mio J)

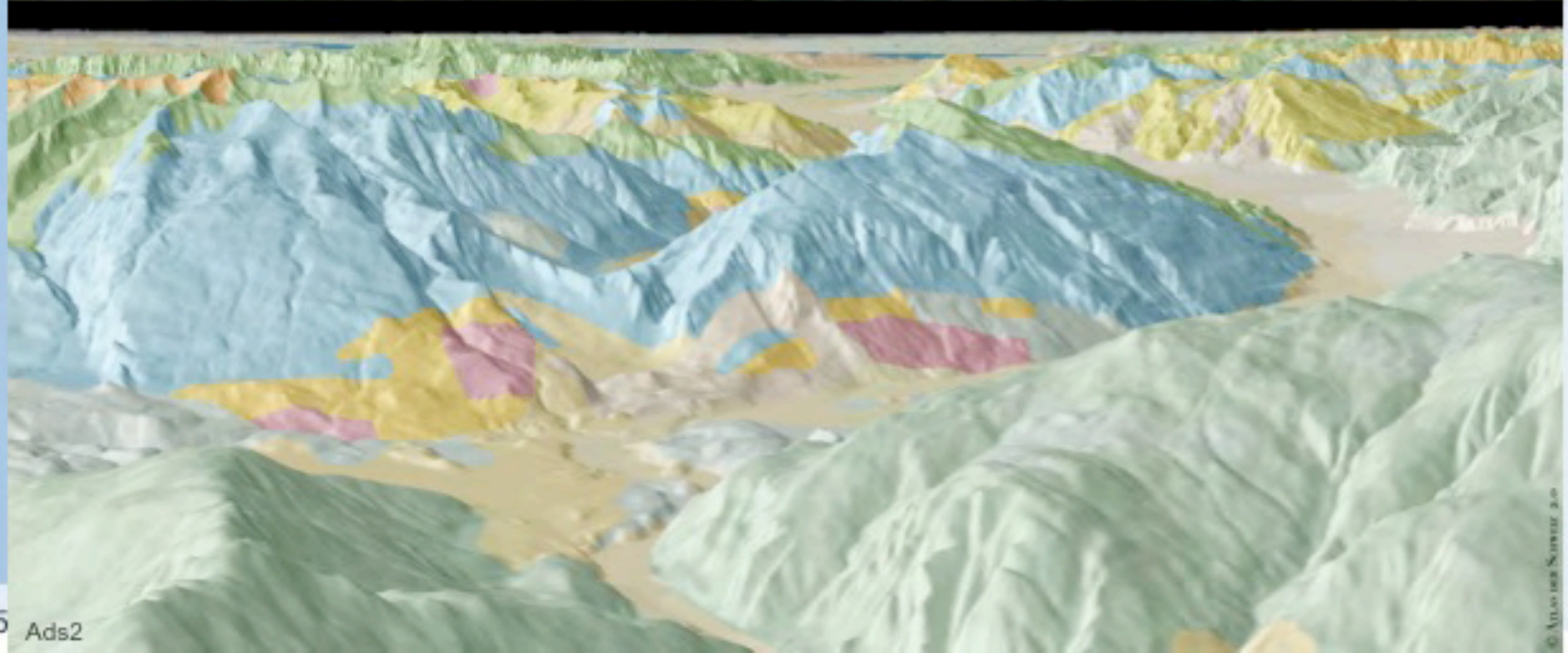


aus O.A. Pfiffner, 2009, Geologie der Alpen, UTB Haupt Verlag

Paläogeographische Karte Pliozän (3 Mio J)

aus O.A. Pfiffner, 2009, Geologie der Alpen, UTB Haupt Verlag


Ads2


Ads2

Höhere Deckenschotter auf Molasse am Irchel