

8th Czech-Polish Workshop
ON RECENT GEODYNAMICS OF THE SUDETEN AND ADJACENT AREAS
Kłodzko (Poland), March 29-31, 2007

Preliminary Geodynamical Pattern of the Bohemian Massif

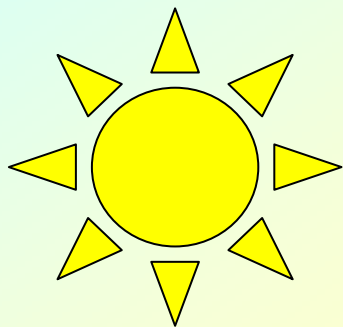
Vladimír Schenk

Zdeňka Schenková, František Mantlík and Milada Grácová



Institute Rock Structure and Mechanics
Academy of Sciences, Czech Republic, Praha
e-mail: schenk@irsm.cas.cz



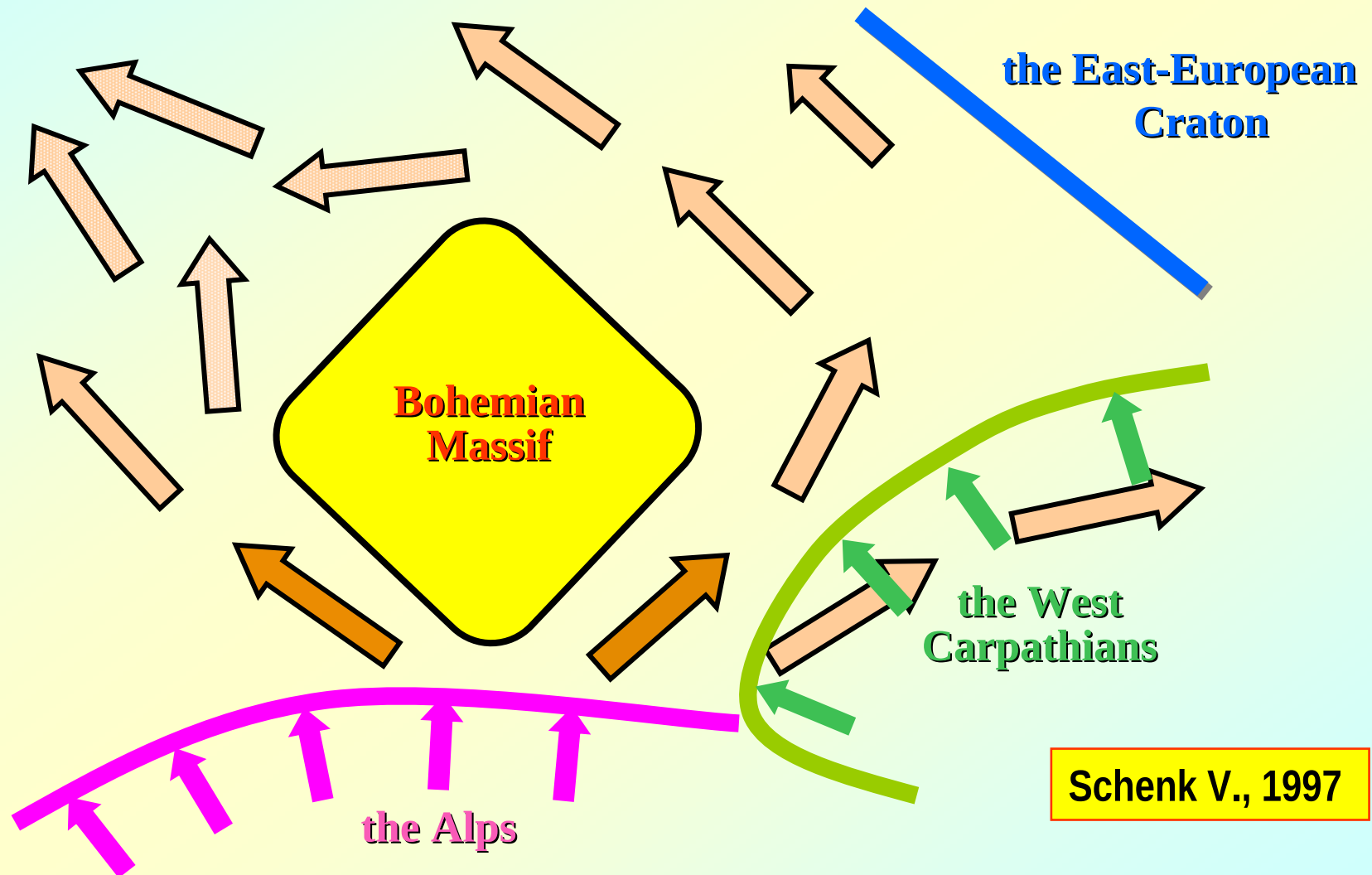


Dedicated to

10 years anniversary

**of the joint Czech-Polish GPS
measurements in the Sudeten area**

Expected Geodynamic Model for the Central Europe



Schenk V., 1997

GPS observations and other data

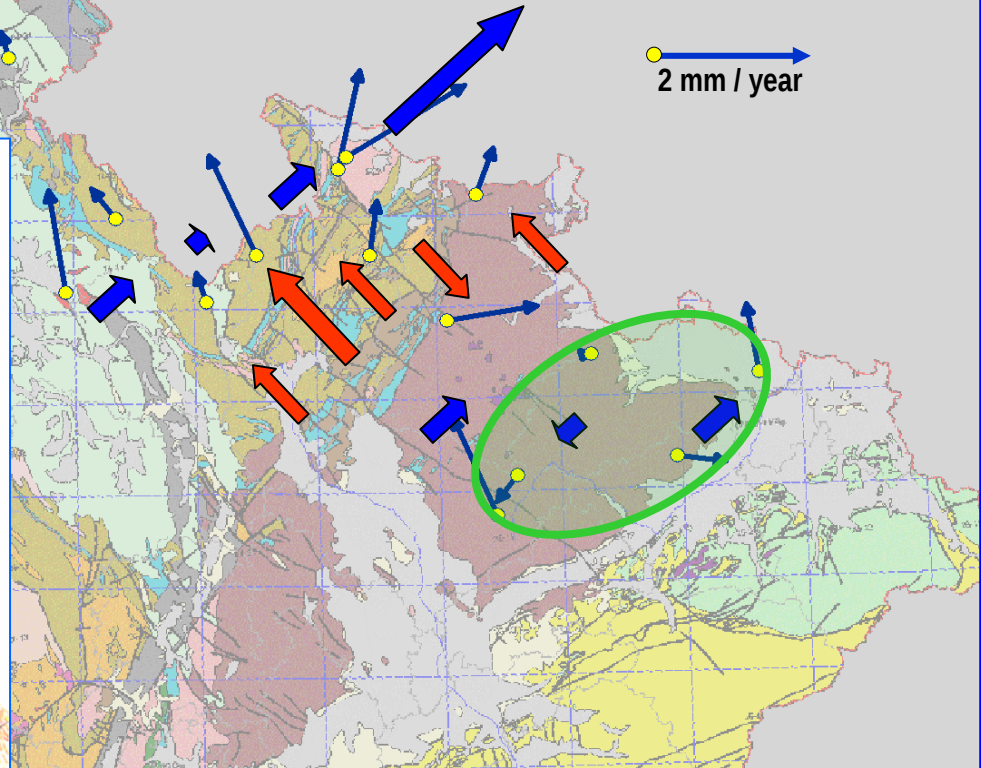
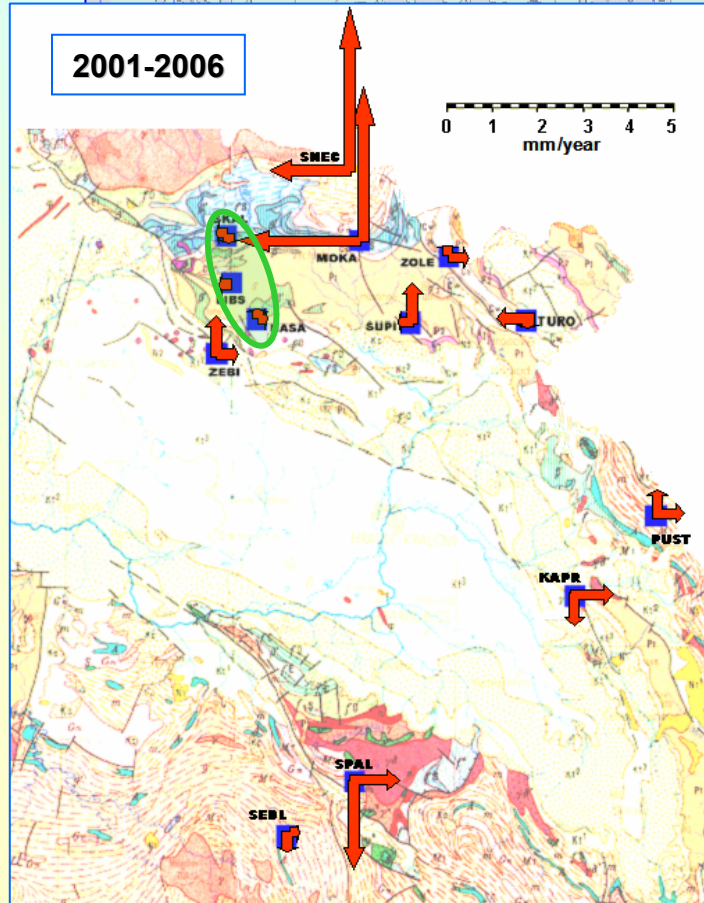
GPS Motions in NE Part of the Bohemian Massif

2001-2005

2 mm / year

2001-2006

0 1 2 3 4 5
mm/year



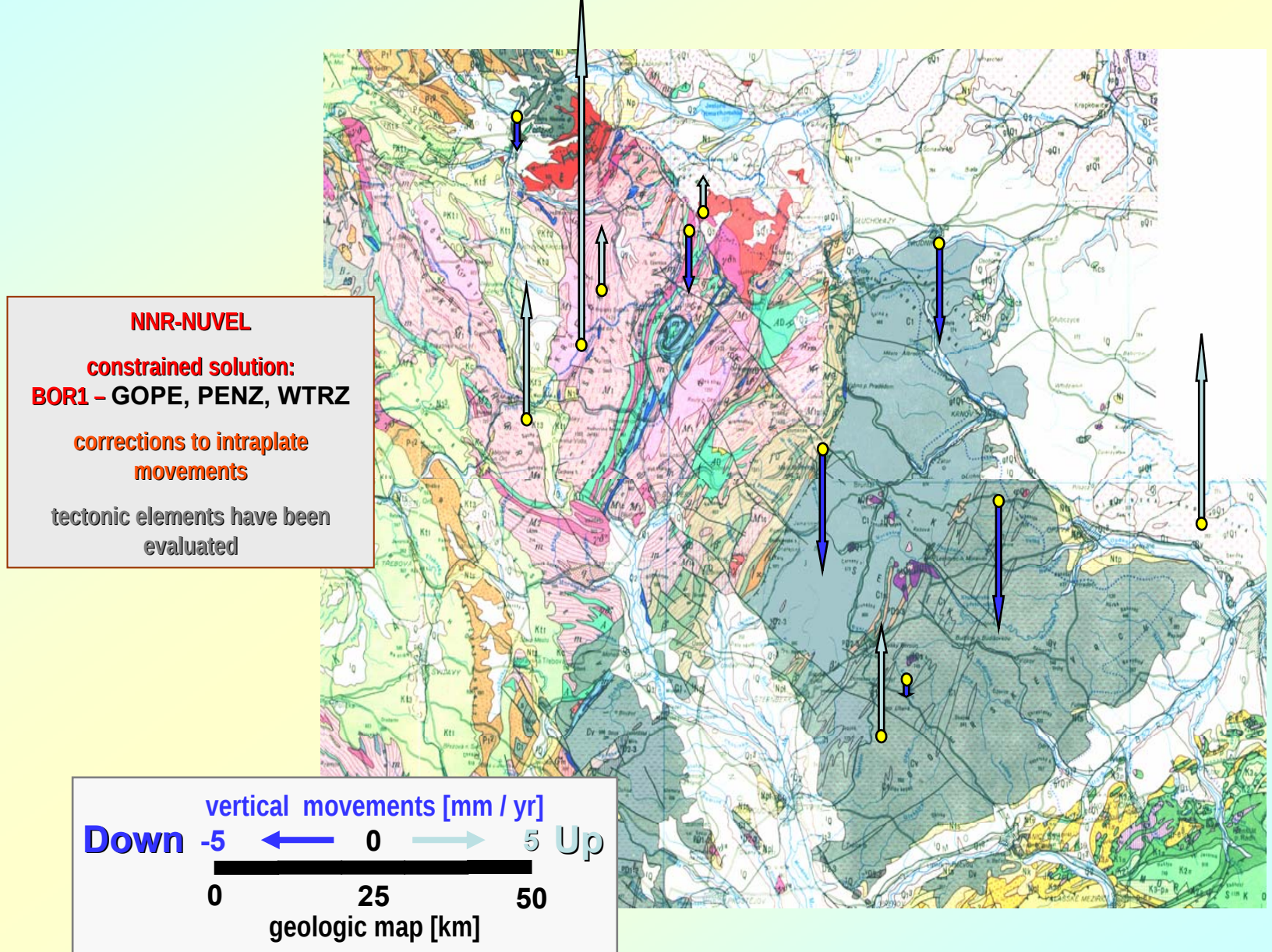
Schenk and Schenková, 2006

3rd General Assembly of the EGU Vienna, EGU06-A-06472

Schenk V., Schenková Z., Grácová M. and Kottnauer, P., 2006

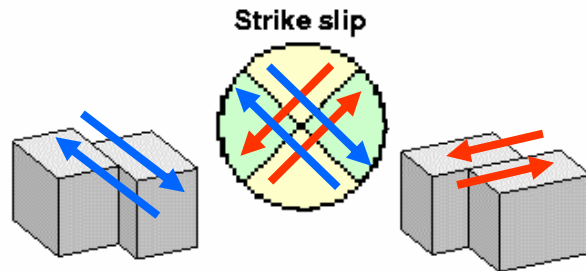
Acta geodynamica et geomaterialia 3, No. 3 (143), 45-51.

Vertical Movement Vectors



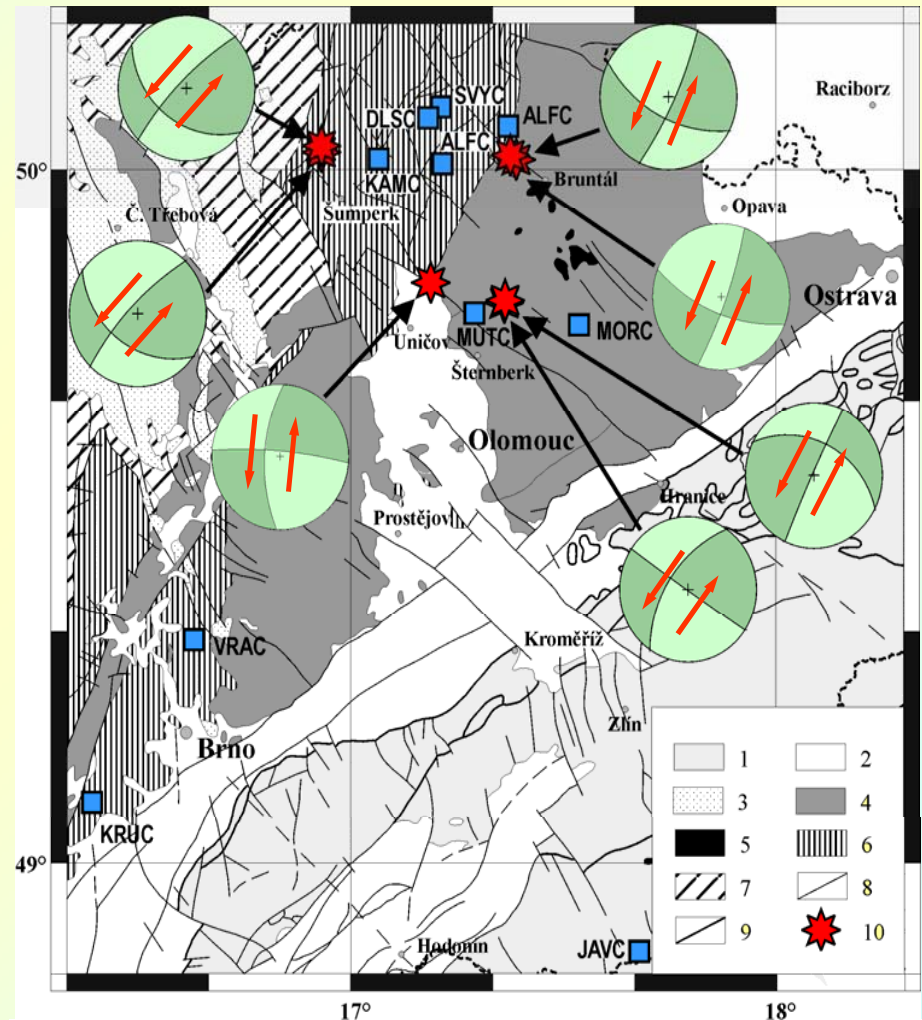
Focal Mechanisms and Motion Interpretations

Schematic diagram of a focal mechanism



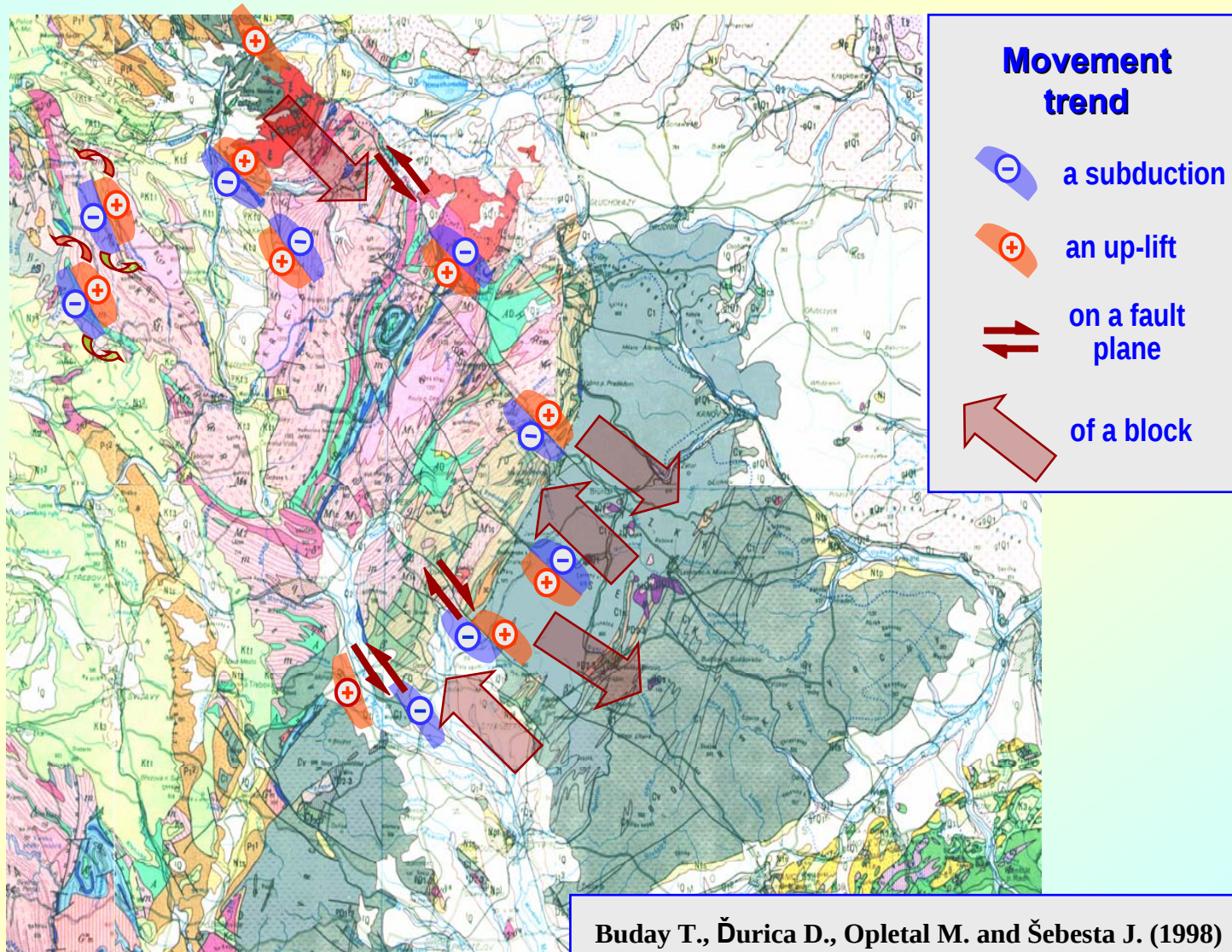
Interpretations
performed by
Havíř (2004)

interpretations
of authors



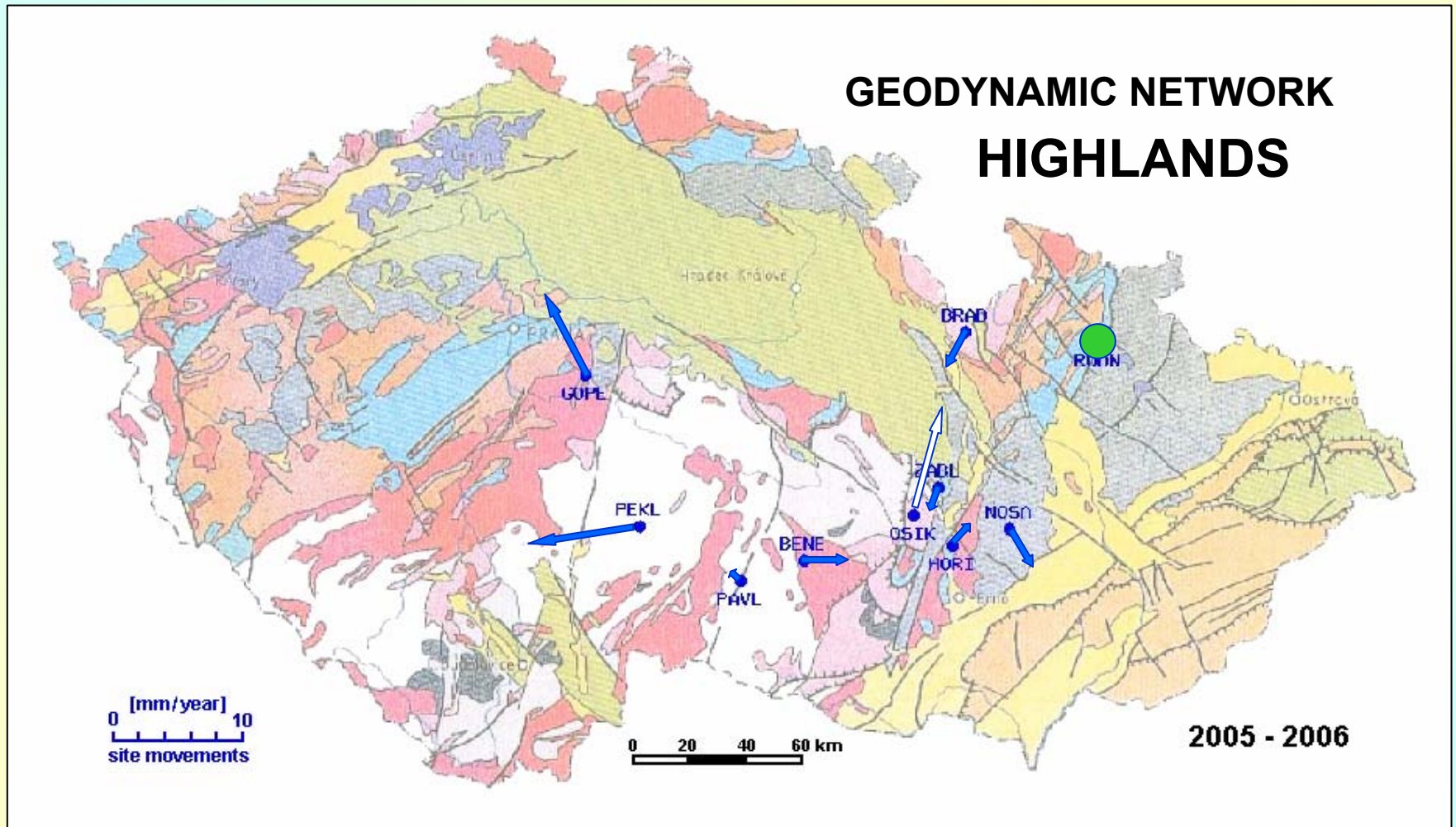
Havíř J. (2004), *Acta Geodyn. Geomater.* 1, No. 3 (135), 49-57.

Movements detected by geological phenomena



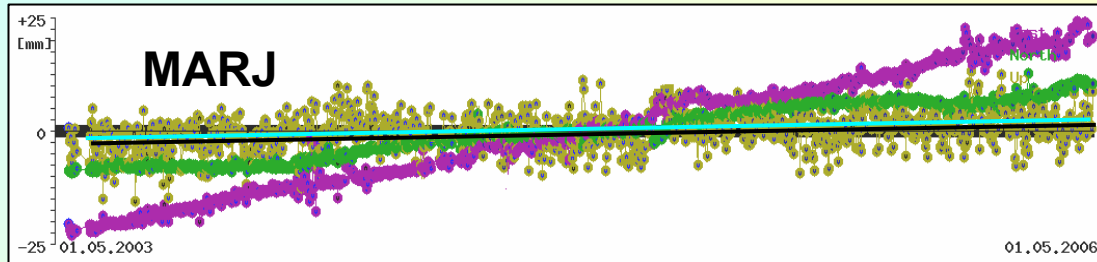
Site Movement Velocities [mm/year]

RUDN fixed



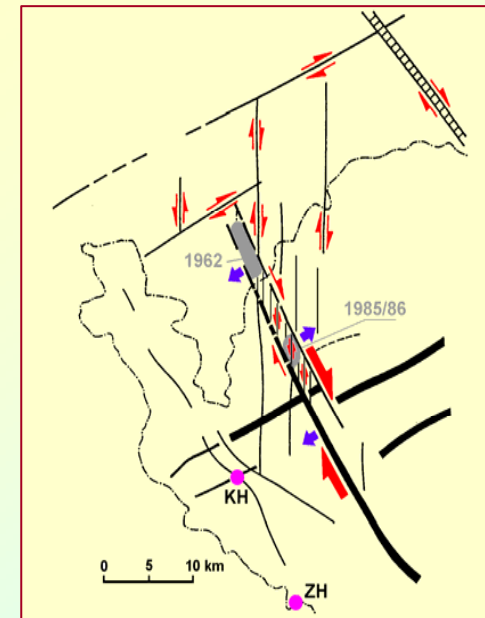
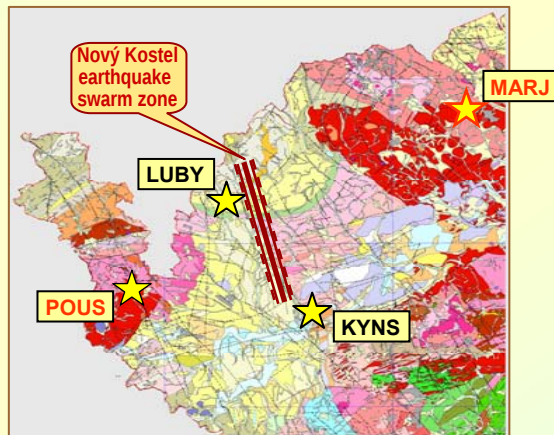
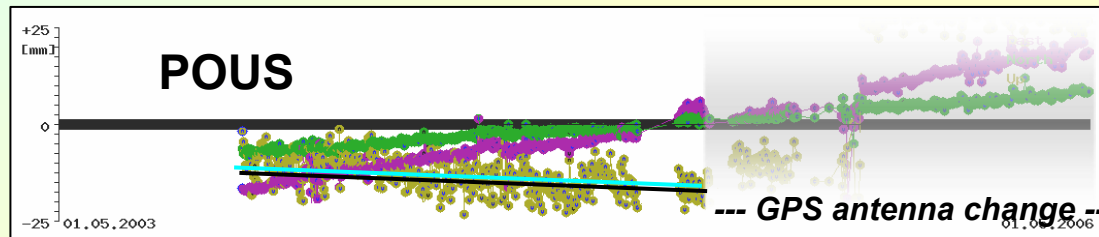
GPS Motions Detected in the West Bohemia

Permanent measurements on two EPN / GEONAS observatories



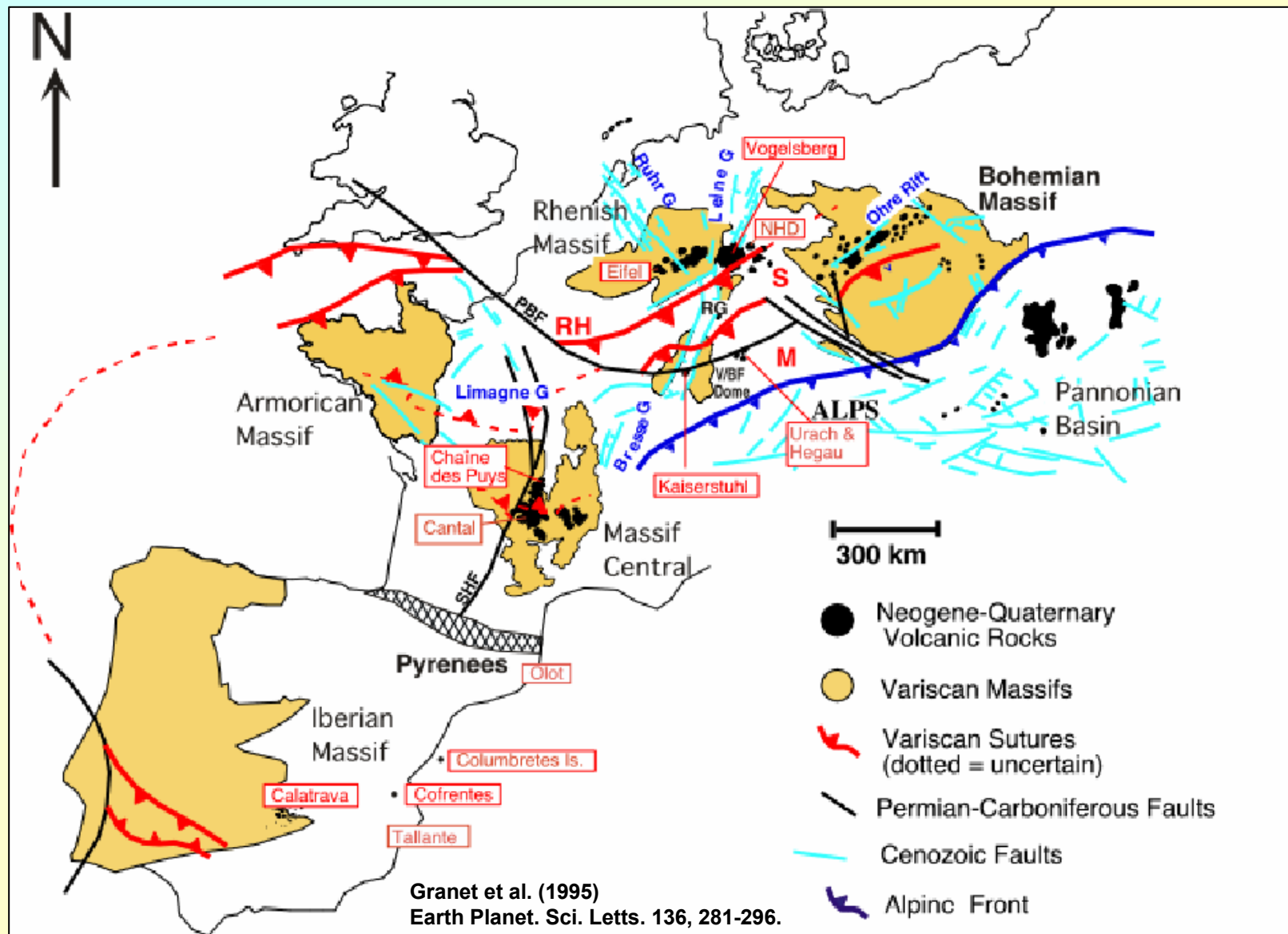
East
North
Up

Time series calculated by the Bernese software, v. 5.0

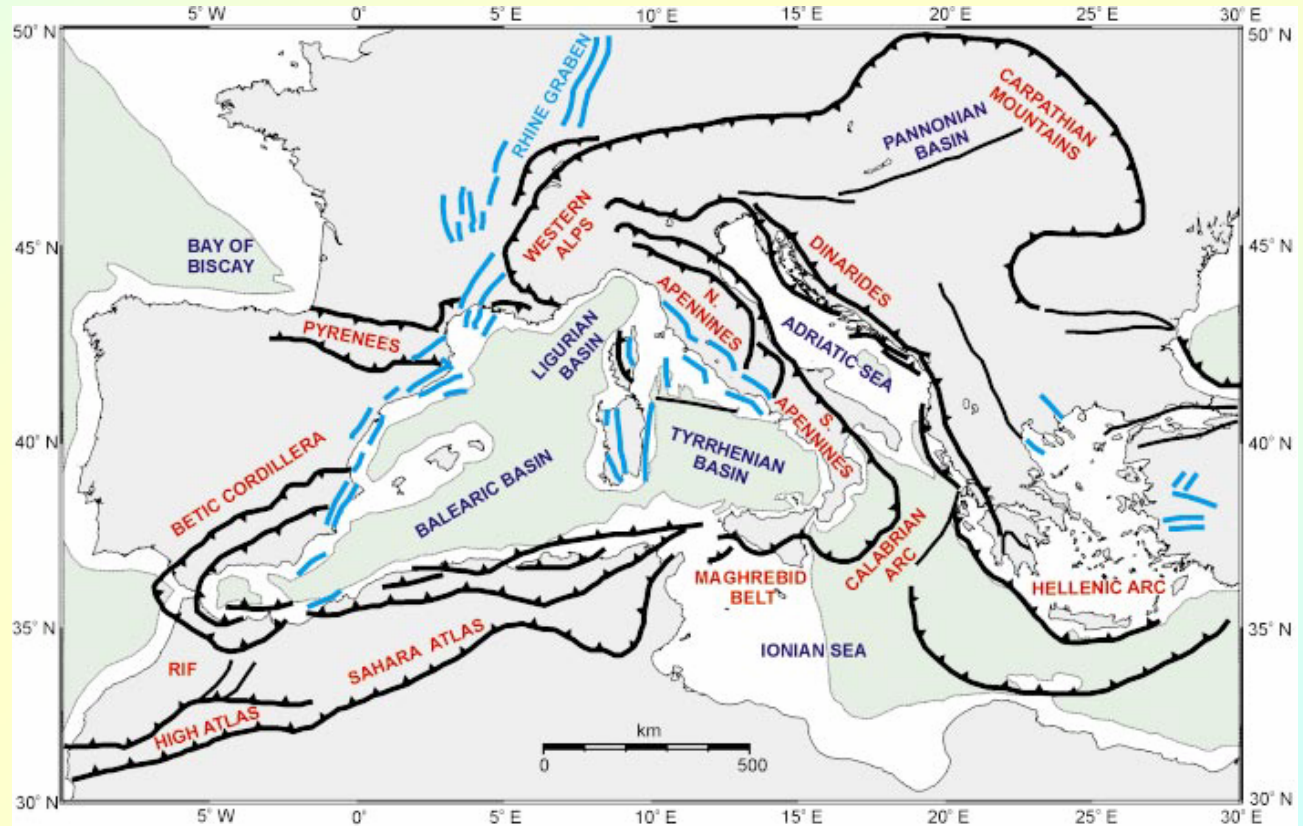
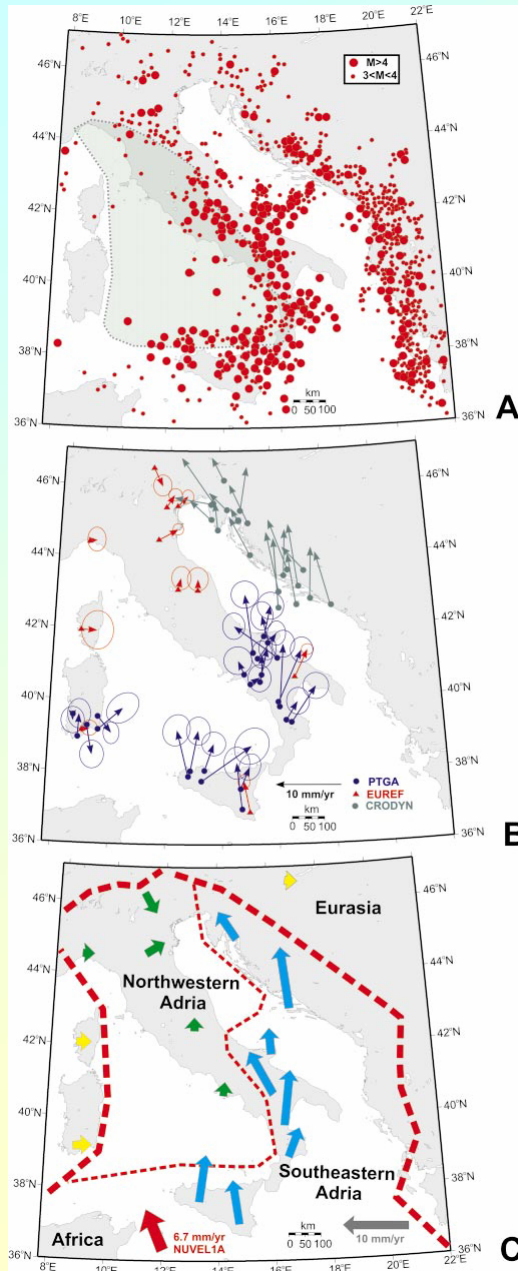


Grünthal G., Schenk V., Zeman A. and Schenková Z. (1990),
Tectonophysics 174,369-383.

Up-to-now Interpreted Structure Motions in Central Europe



Active fragmentation of Adria

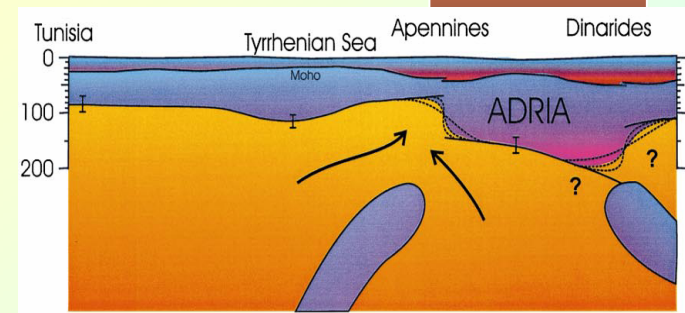
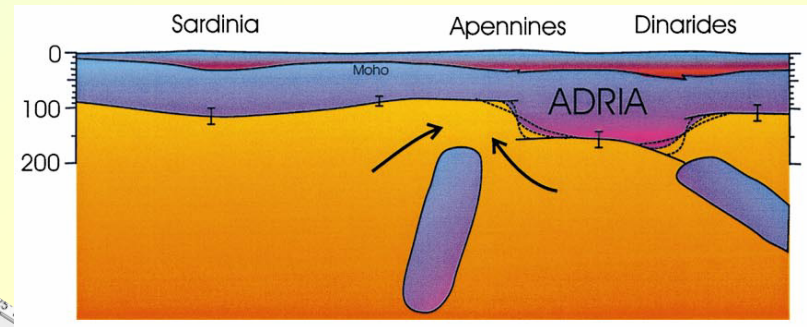


Oldow et al. (2002), *Geology* 30 (9), 779–782

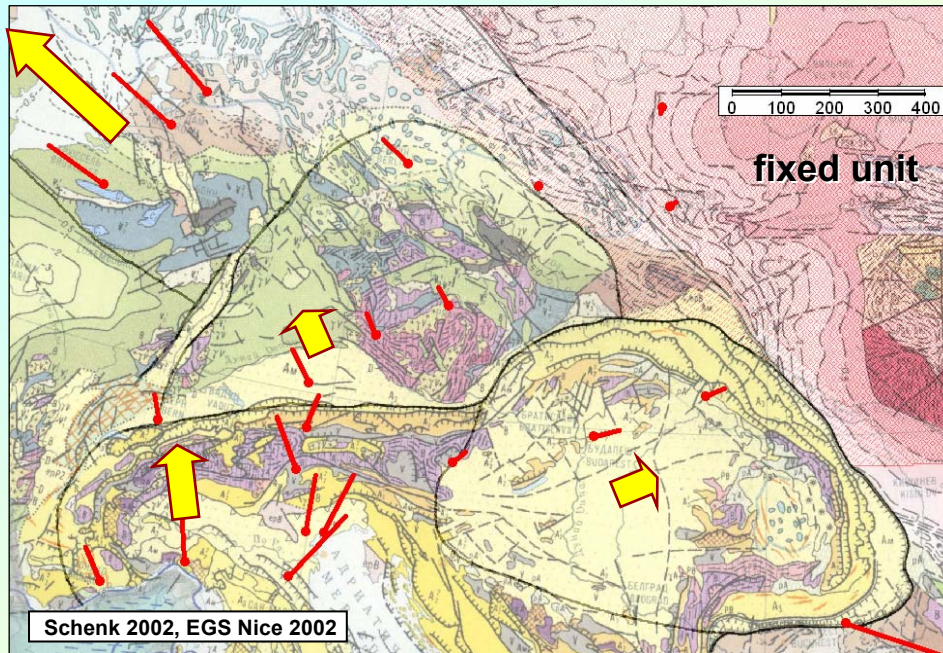
Position of the Adria sub-plate in the lithosphere



Oldow et al. (2002)
Geology 30 (9), 779–782



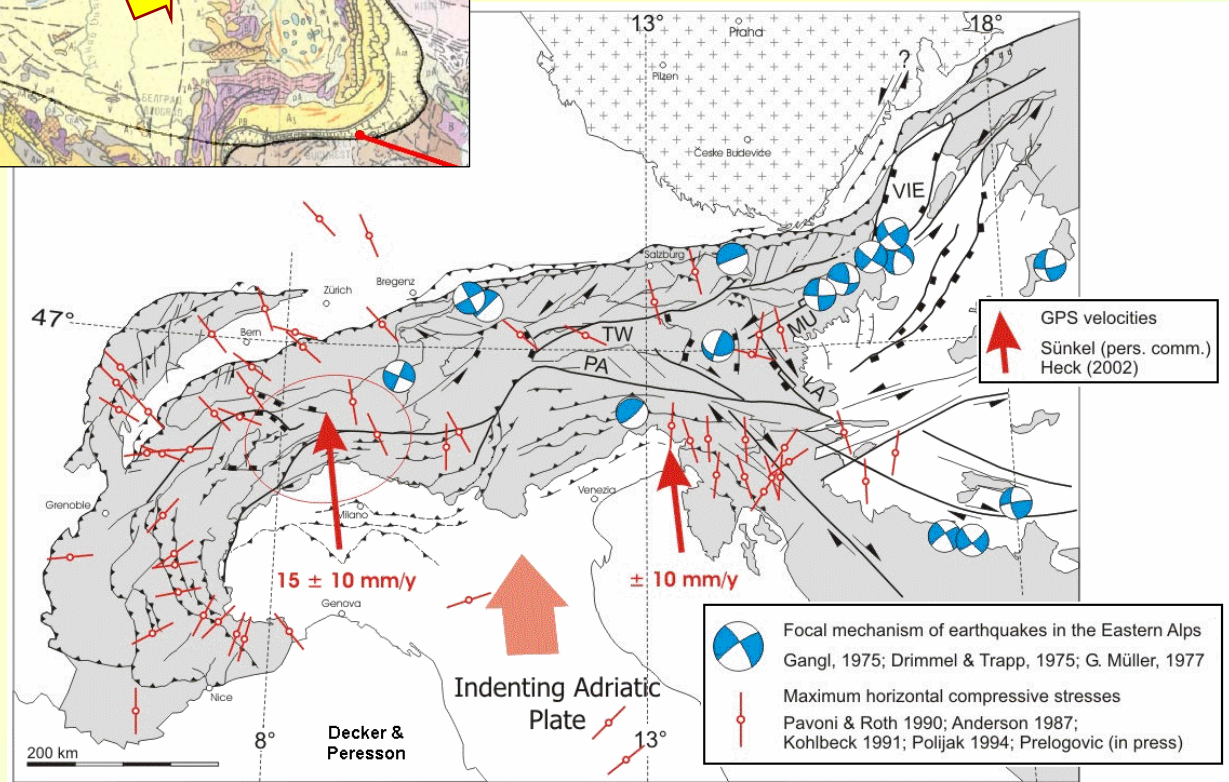
Gvrtzman and Nur (2001),
Earth & Planetary Science Letters 187, 117-130



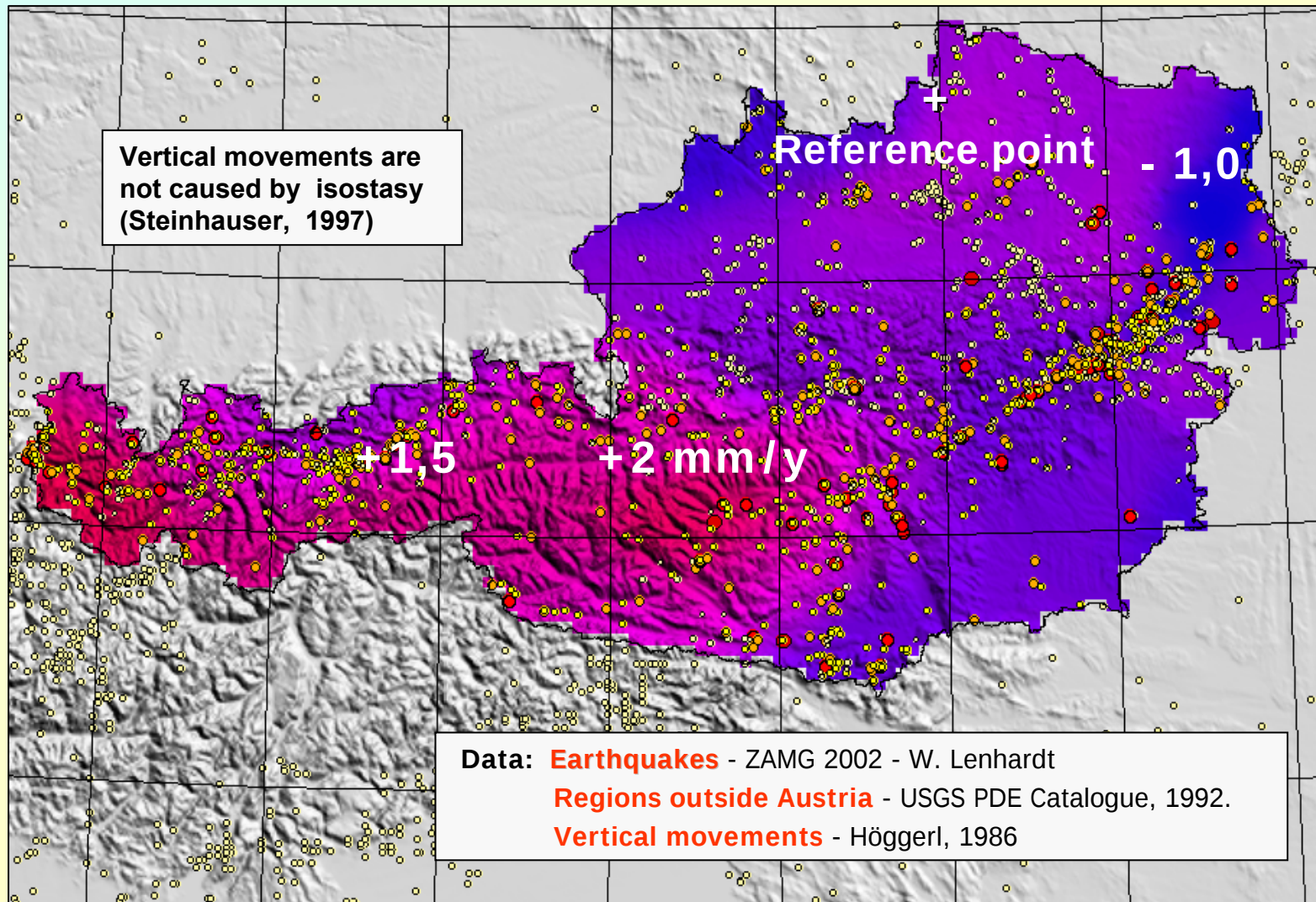
European Intra-plate Motions



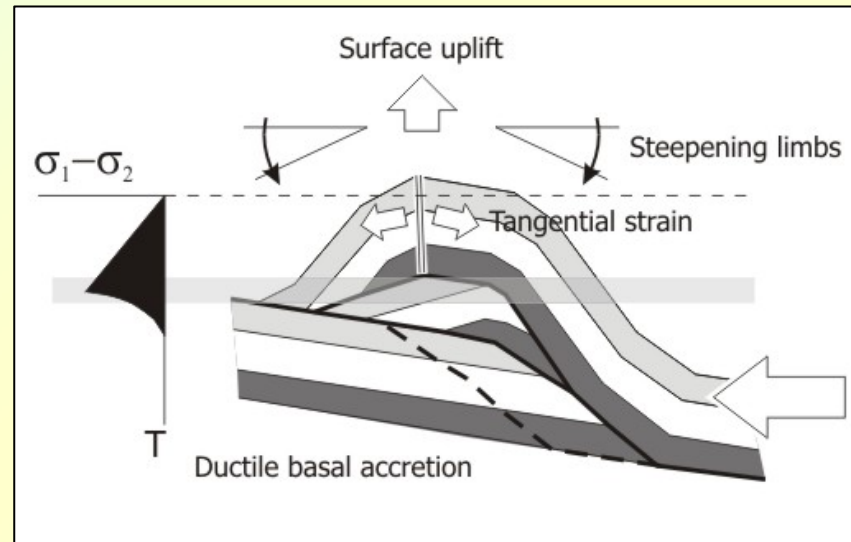
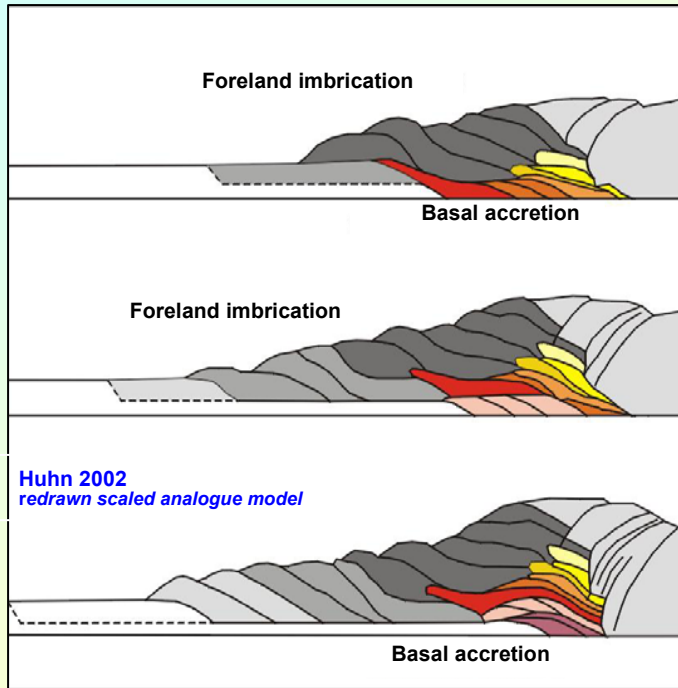
Movements of the Alpine structures



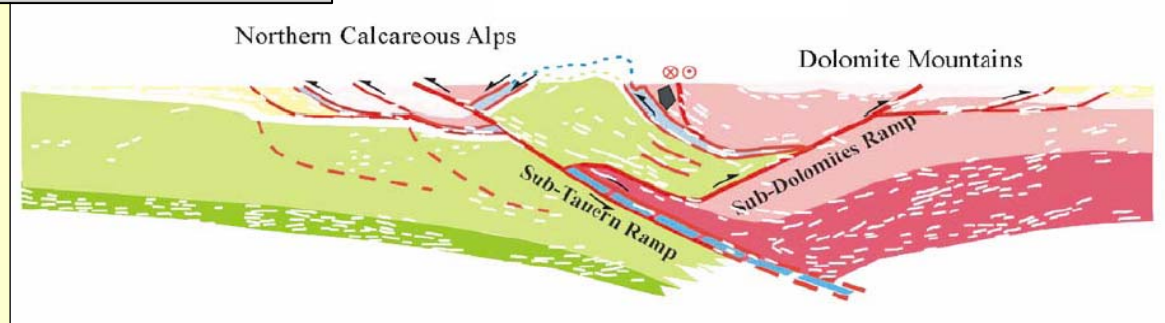
Shortening in the Tauern and extensions in the Eastern Alps and in southern part of the Bohemian Massif



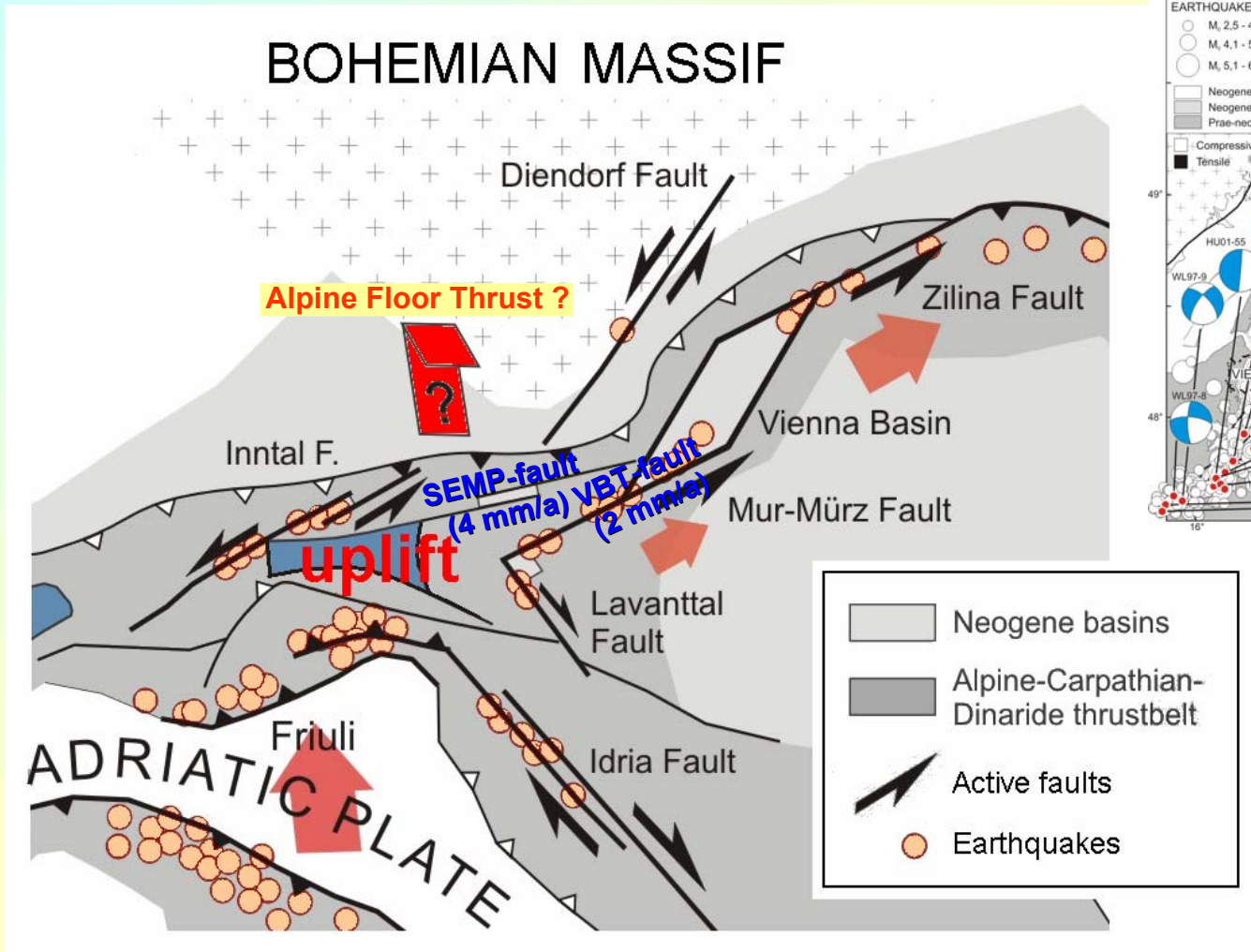
Upramping the Tauern Window



Tauern Window

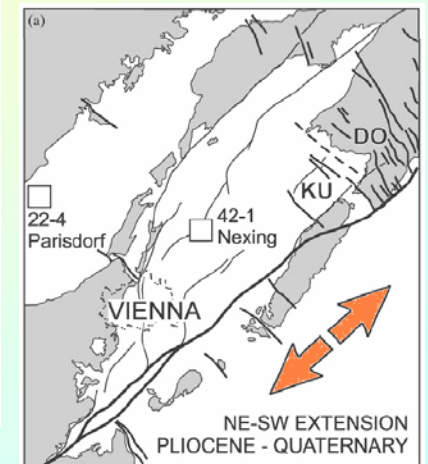
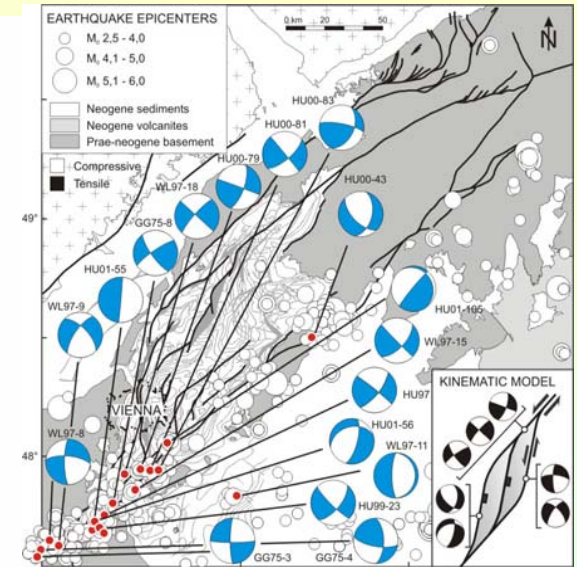


Influence to the Bohemian Massif

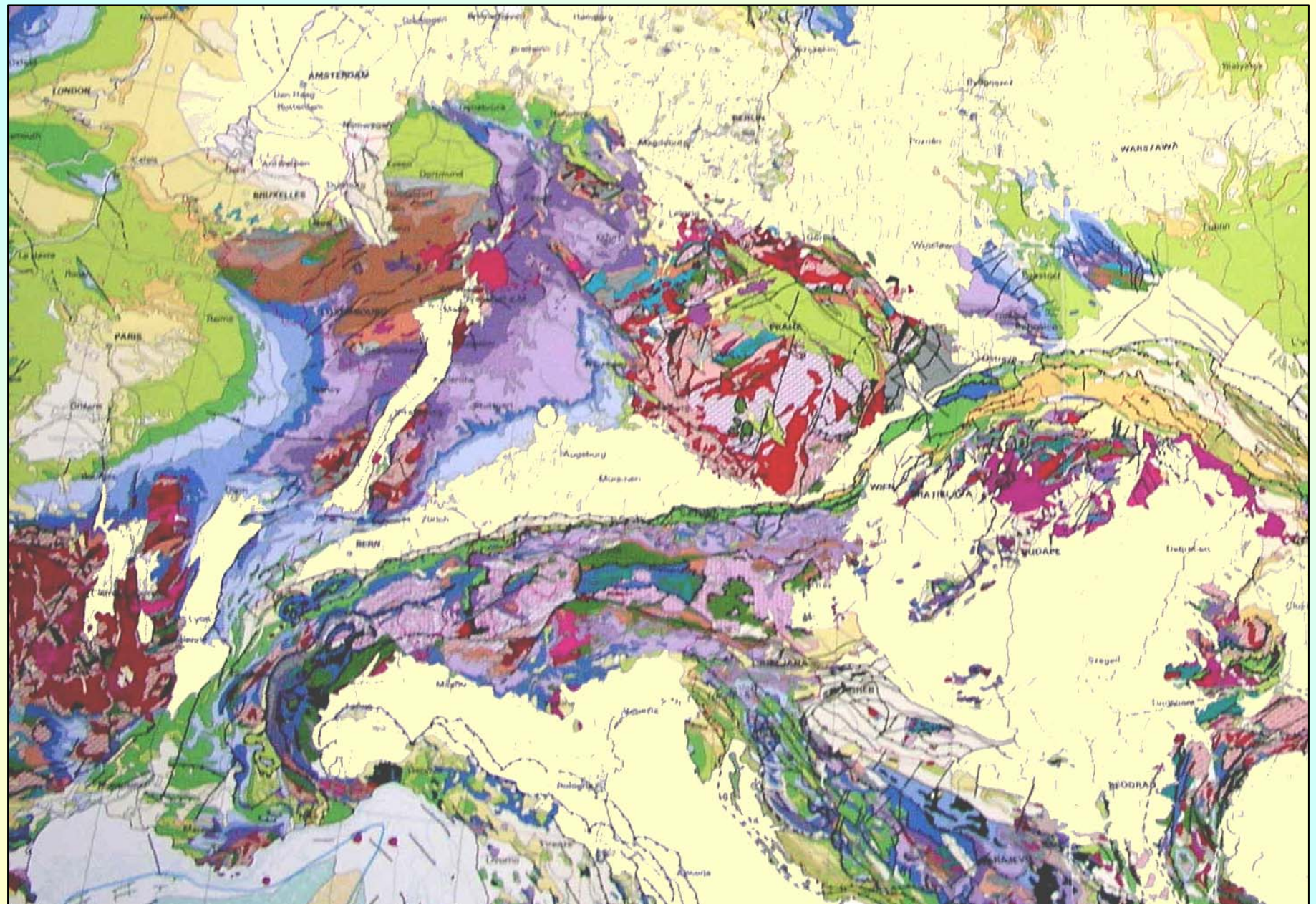


Vienna Basin Transfer Fault

Slip along reactivated Miocene faults in the SE Vienna Basin



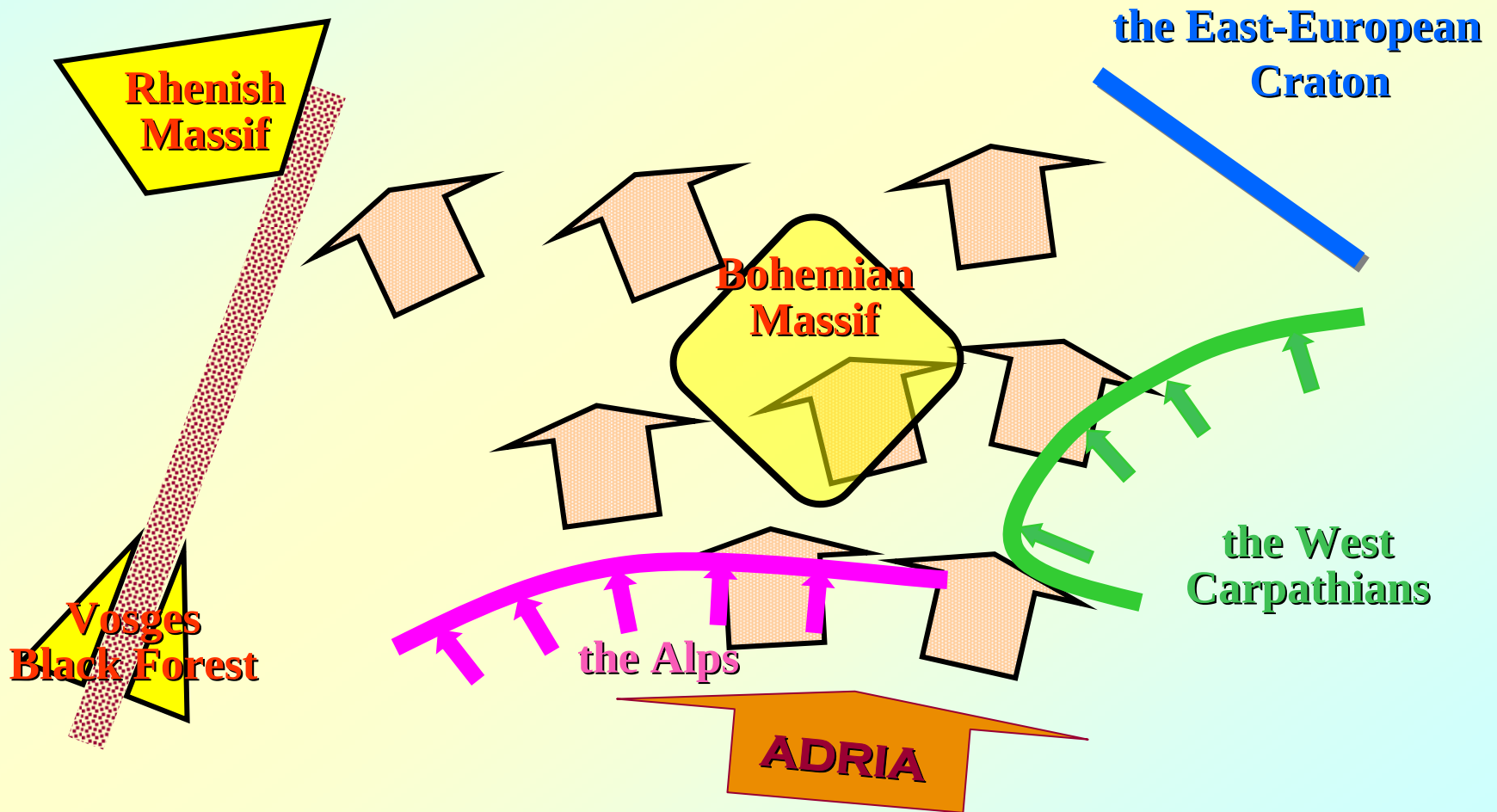
papers published by **Decker, Hinsch et al.**



A geological map of the Iberian Peninsula and surrounding regions, showing various geological units in different colors (purple, red, yellow, green, blue). Overlaid on the map are several green arrows indicating tectonic stress directions. There are two red circles with a '+' sign and five blue circles with a '-' sign, representing areas of compression and tension, respectively. The map includes labels for various geological features and regions, such as 'Mura', 'Wien', 'HATIRIAGA', and 'VILLUPE'.

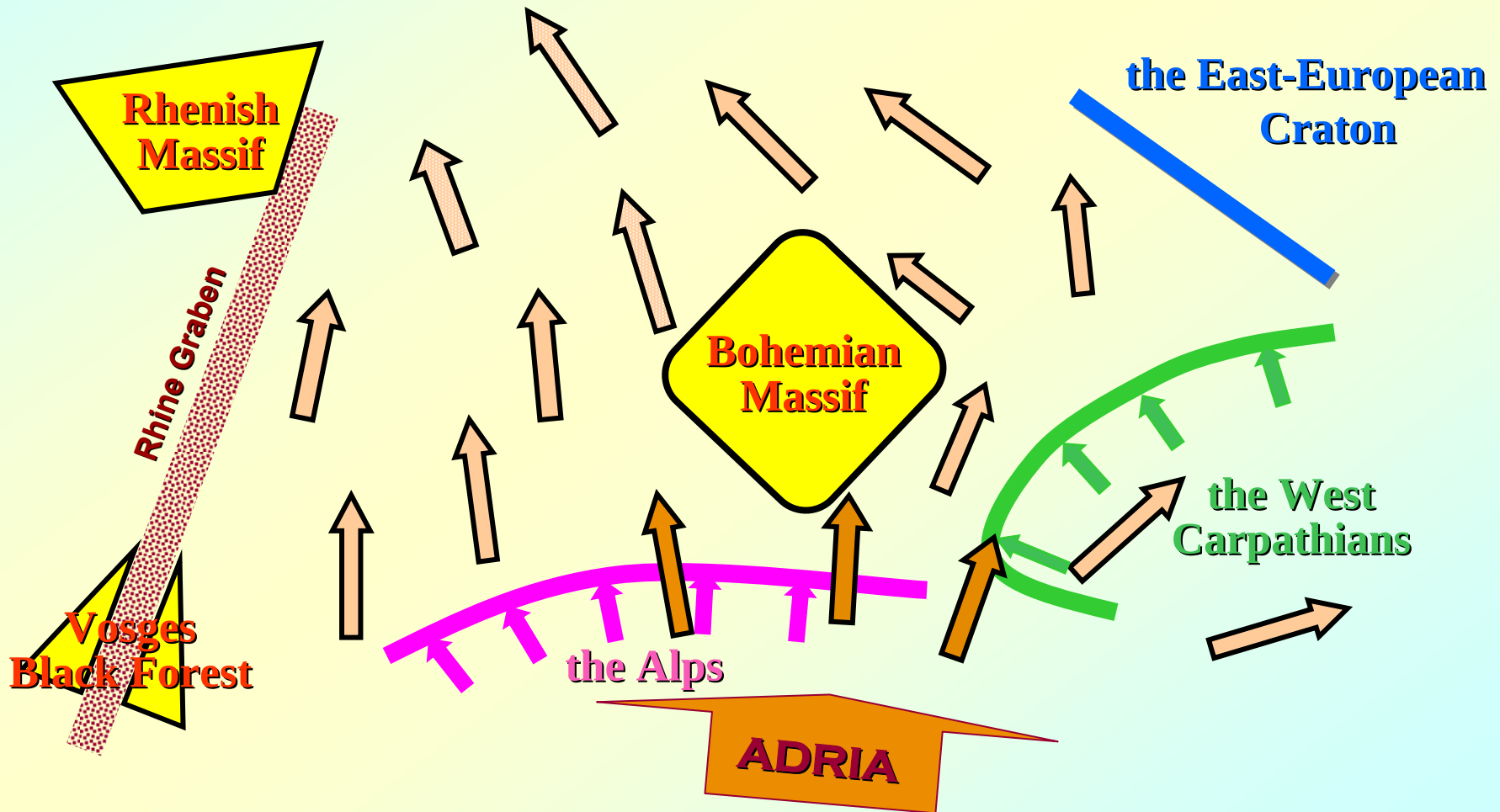
Possible Geodynamic Model for the Central Europe

the Lower Crust / Lithosphere Floor



Possible Geodynamic Model for the Central Europe

the Upper Crust Floor



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THE END

Thank you for your attention

