

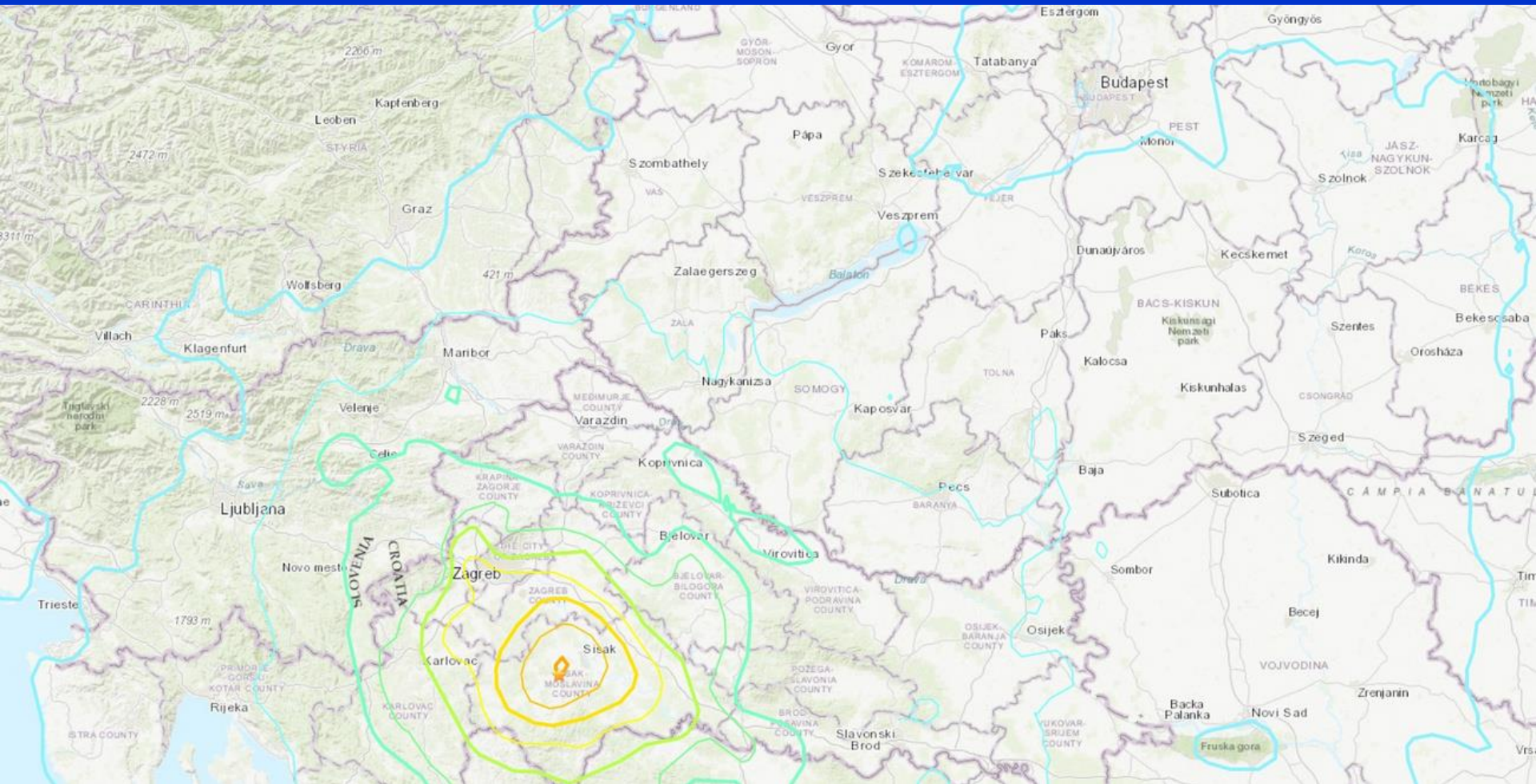
A Föld-rendszer működése

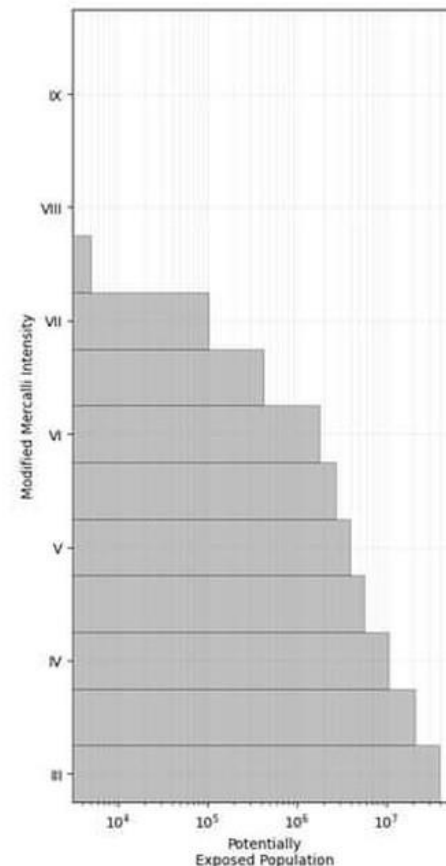
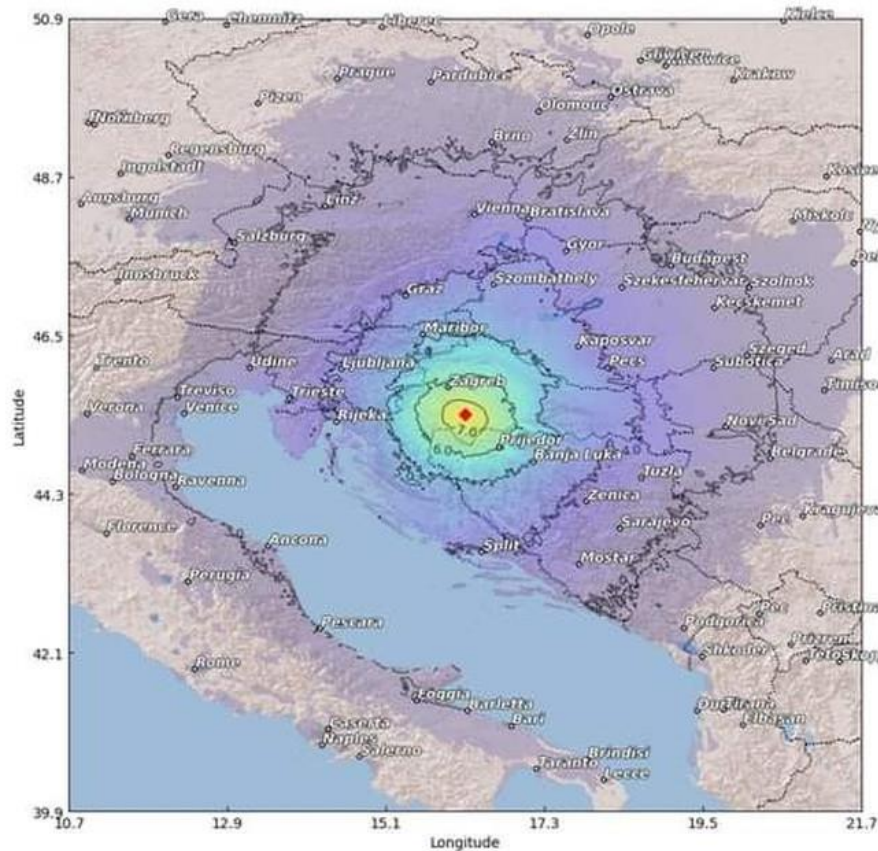
Timár Gábor

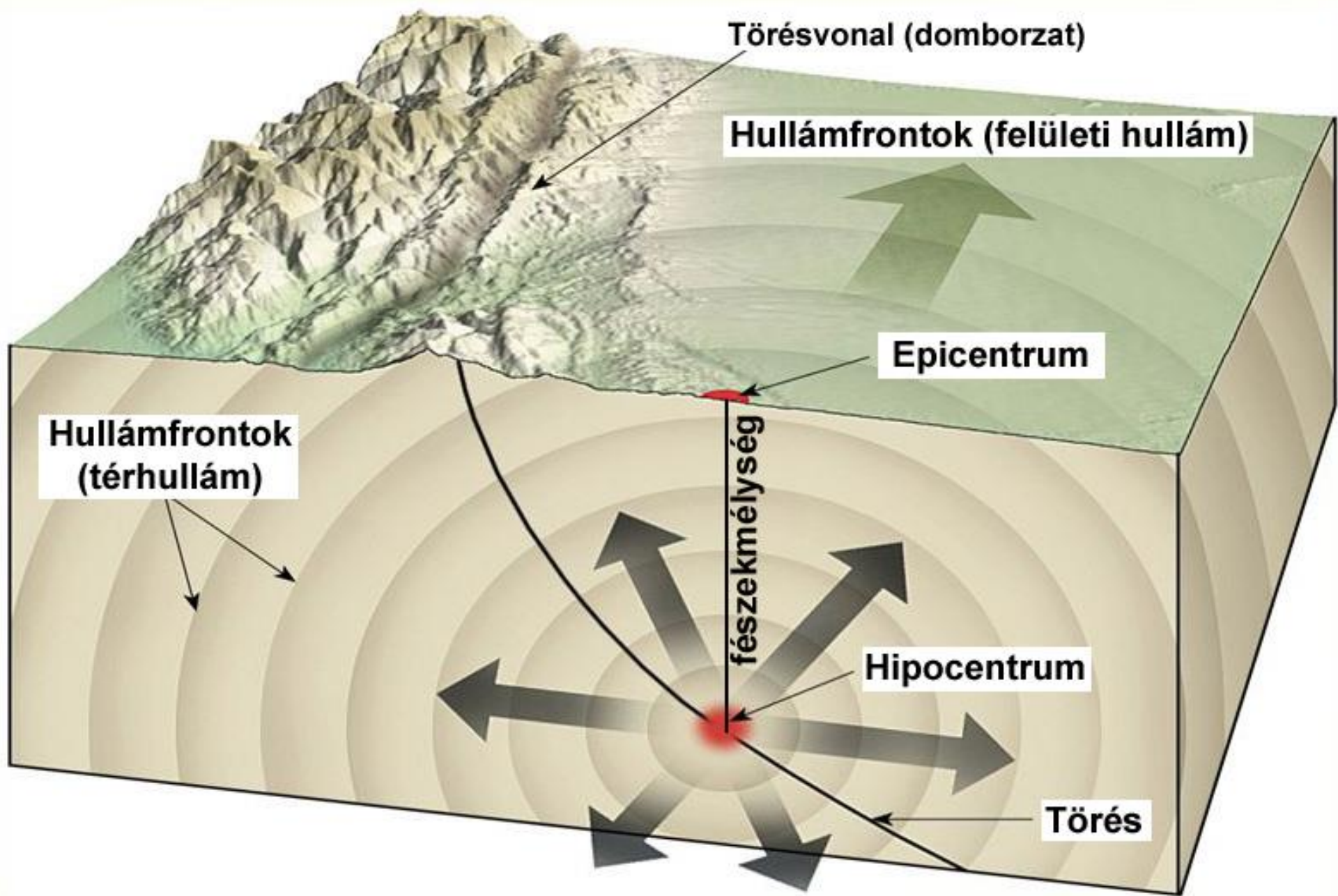
ELTE Geofizikai és Űrtudományi Tanszék

Földrajz- és Földtudományi Intézet
Eötvös Loránd Tudományegyetem
1117 Budapest, Pázmány P. st. 1/C









Törésvonal (domborzat)

Hullámfrontok (felületi hullám)

Epicentrum

Hullámfrontok
(térhullám)

fészekmélység

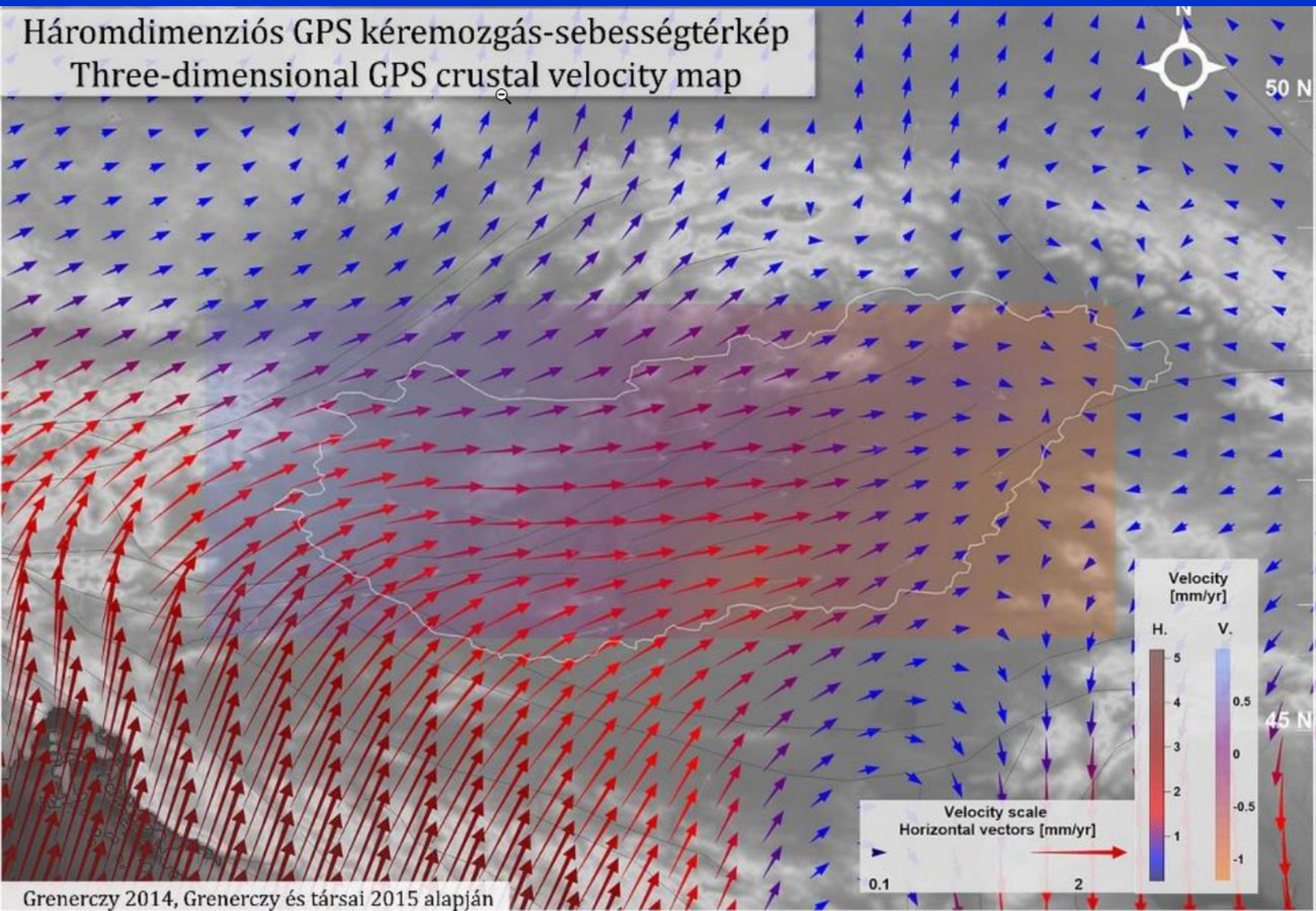
Hipocentrum

Törés



Háromdimenziós GPS kéremozgás-sebességtérkép

Three-dimensional GPS crustal velocity map

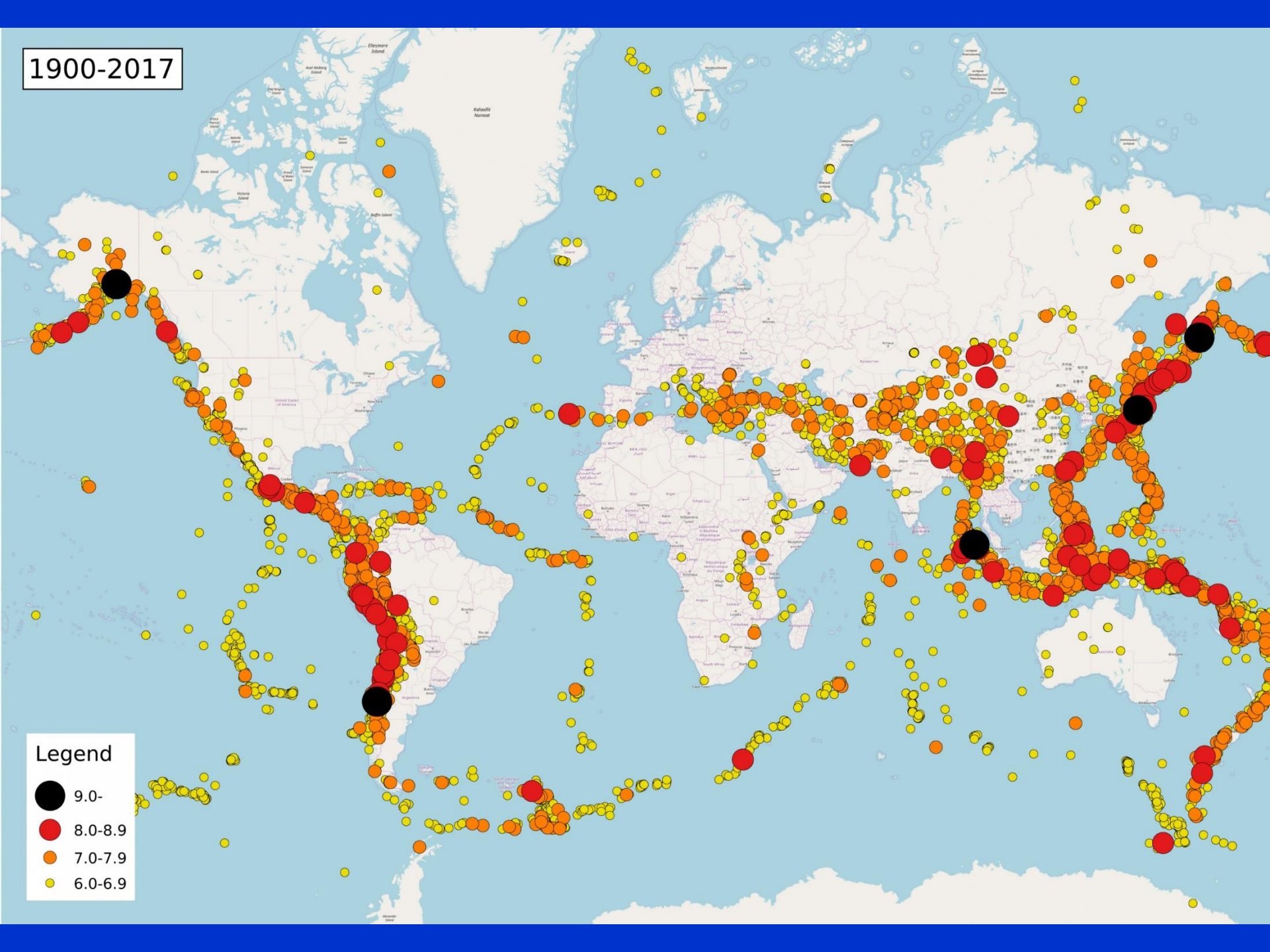


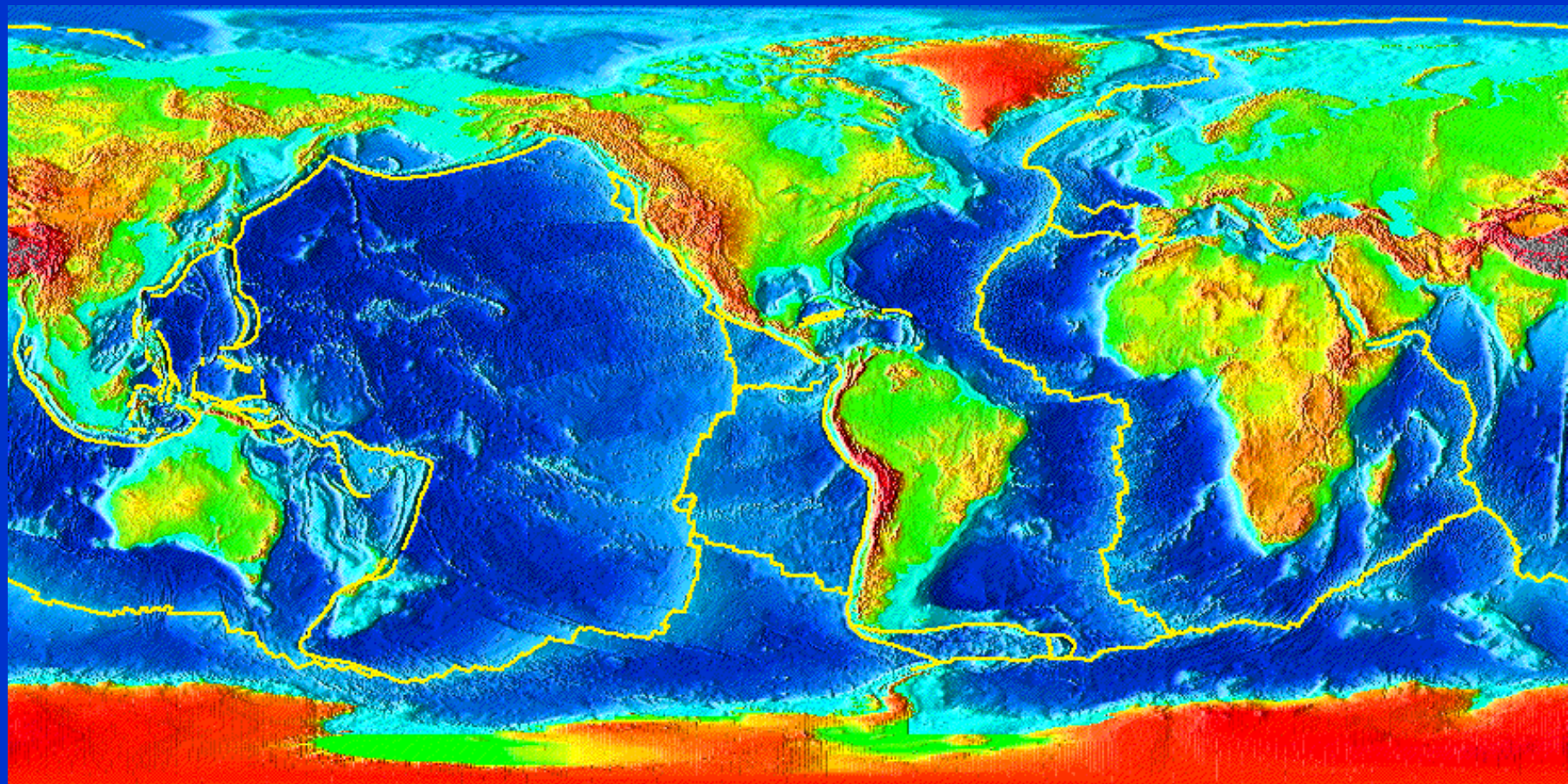
Grenerczy 2014, Grenerczy és társai 2015 alapján

1900-2017

Legend

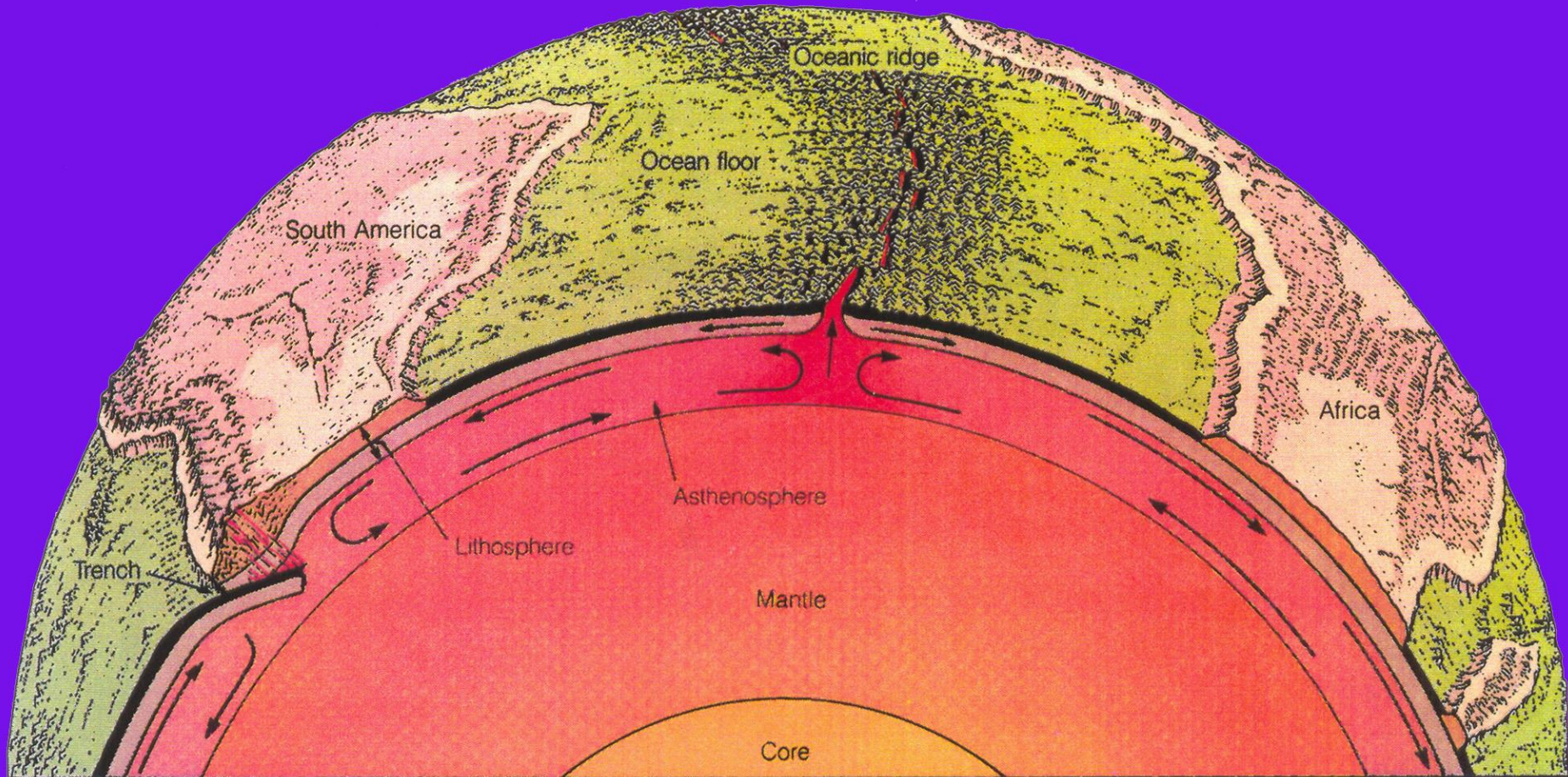
- 9.0-
- 8.0-8.9
- 7.0-7.9
- 6.0-6.9



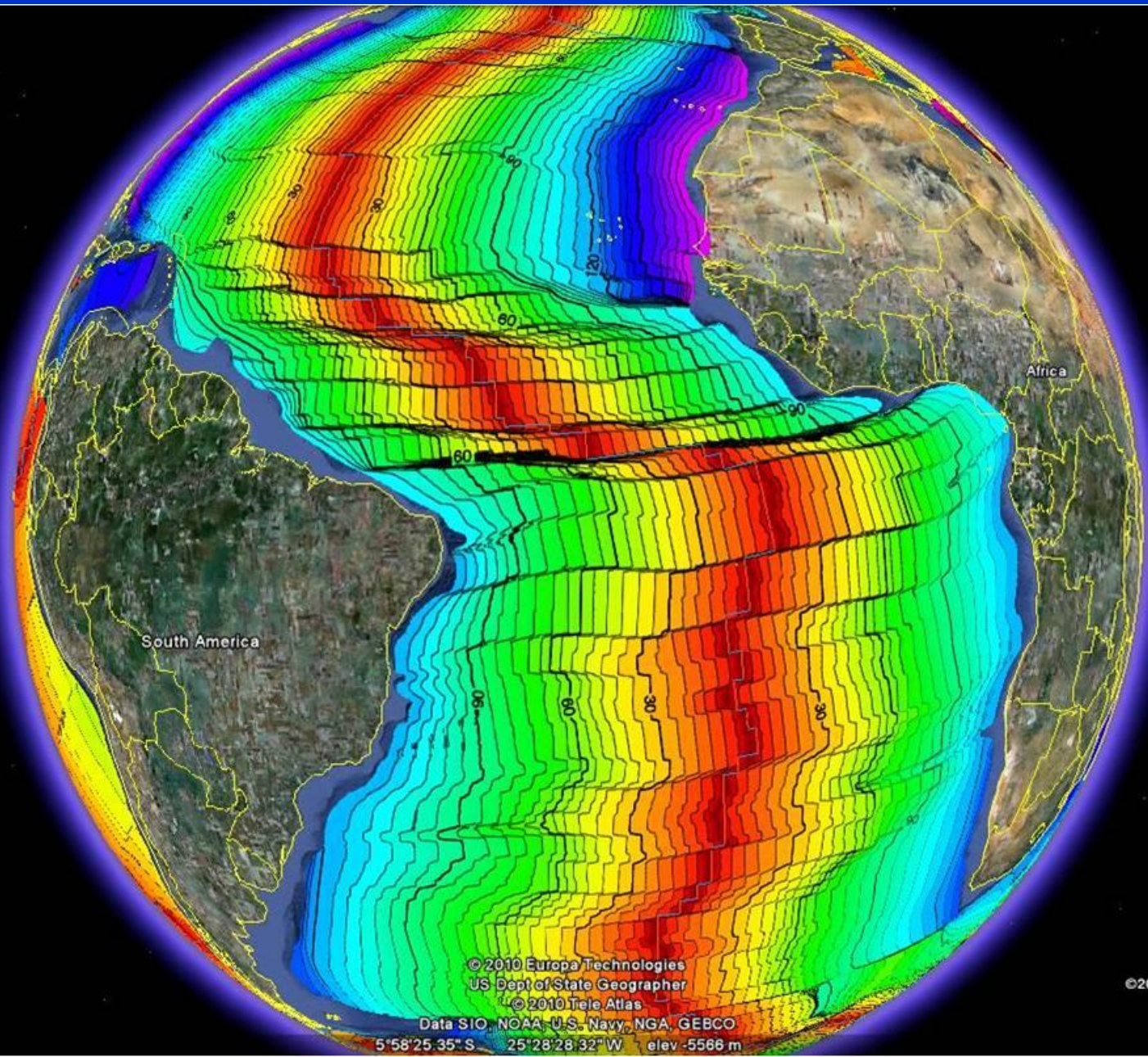


Crustal Plate Boundaries

A lemeztektonika „klasszikus” modellje



AGE OF OCEAN FLOOR Millions Years before present



- Spreading ridge
- Overthrusting front
- Transform faults

© 2010 Europa Technologies
US Dept of State Geographer
© 2010 Tele Atlas
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
5°58'25.35" S 25°28'28.32" W elev -5566 m

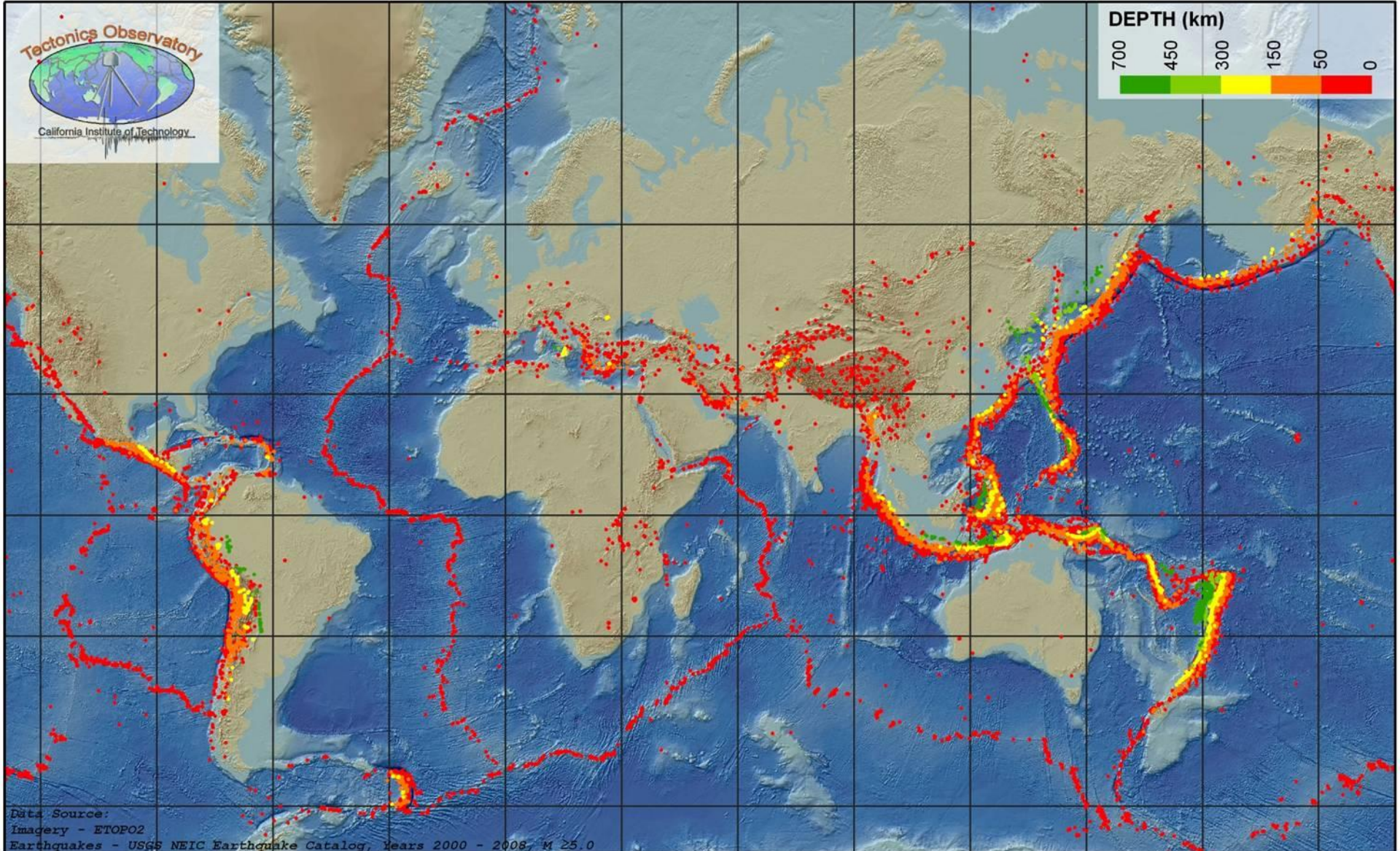
©2010 Google™

Eye alt 10144.43 km

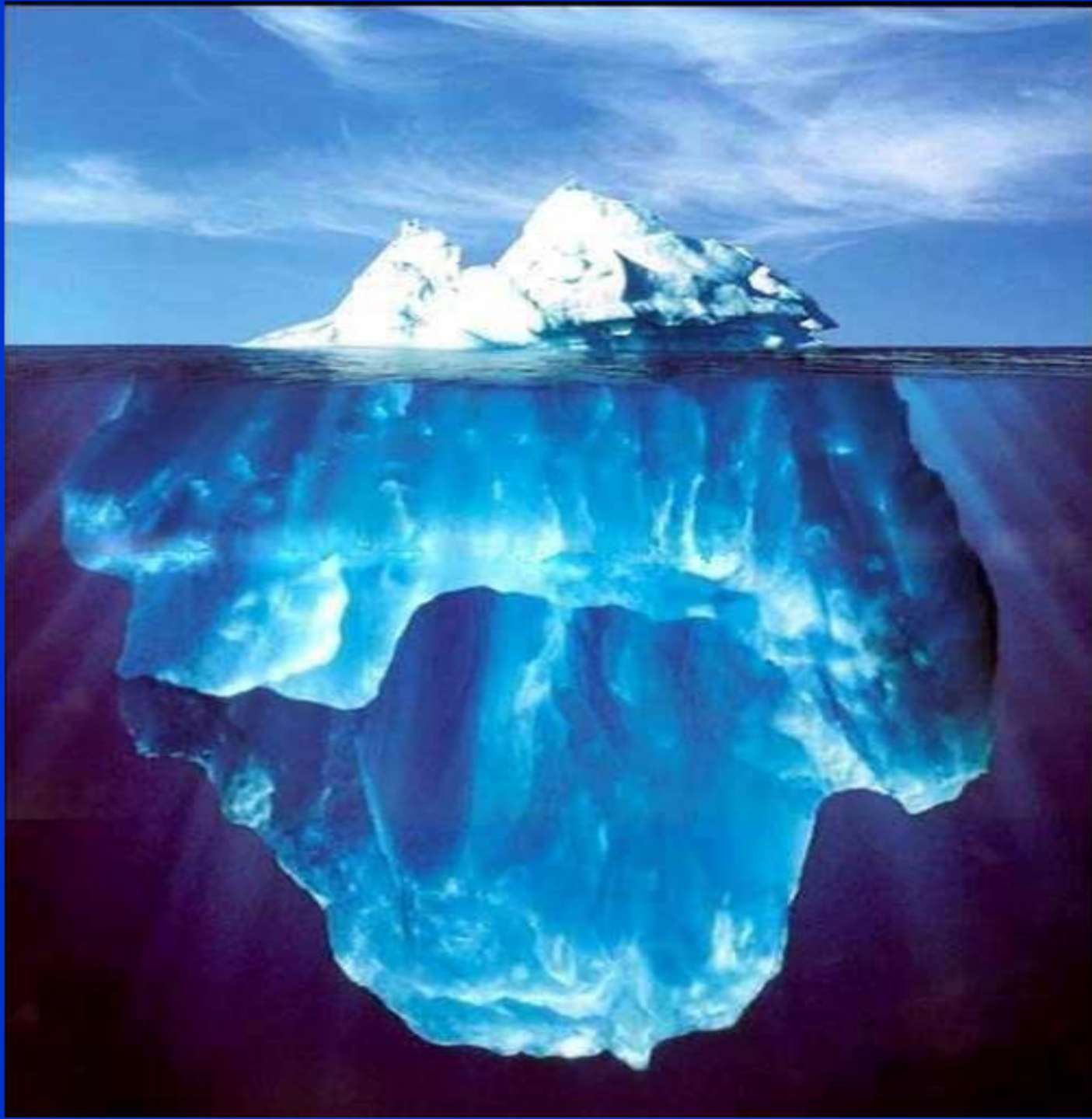
Tectonics Observatory

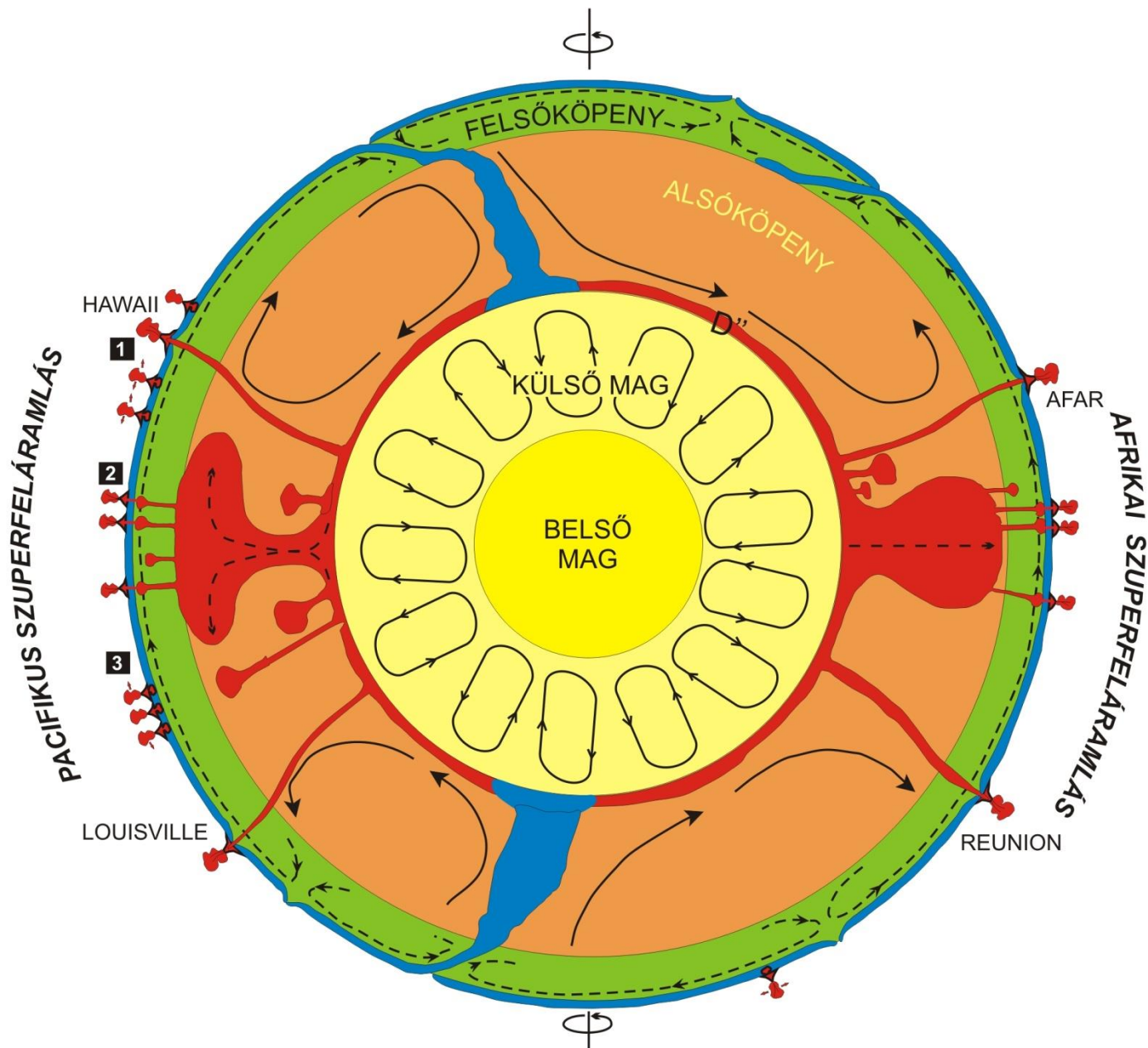


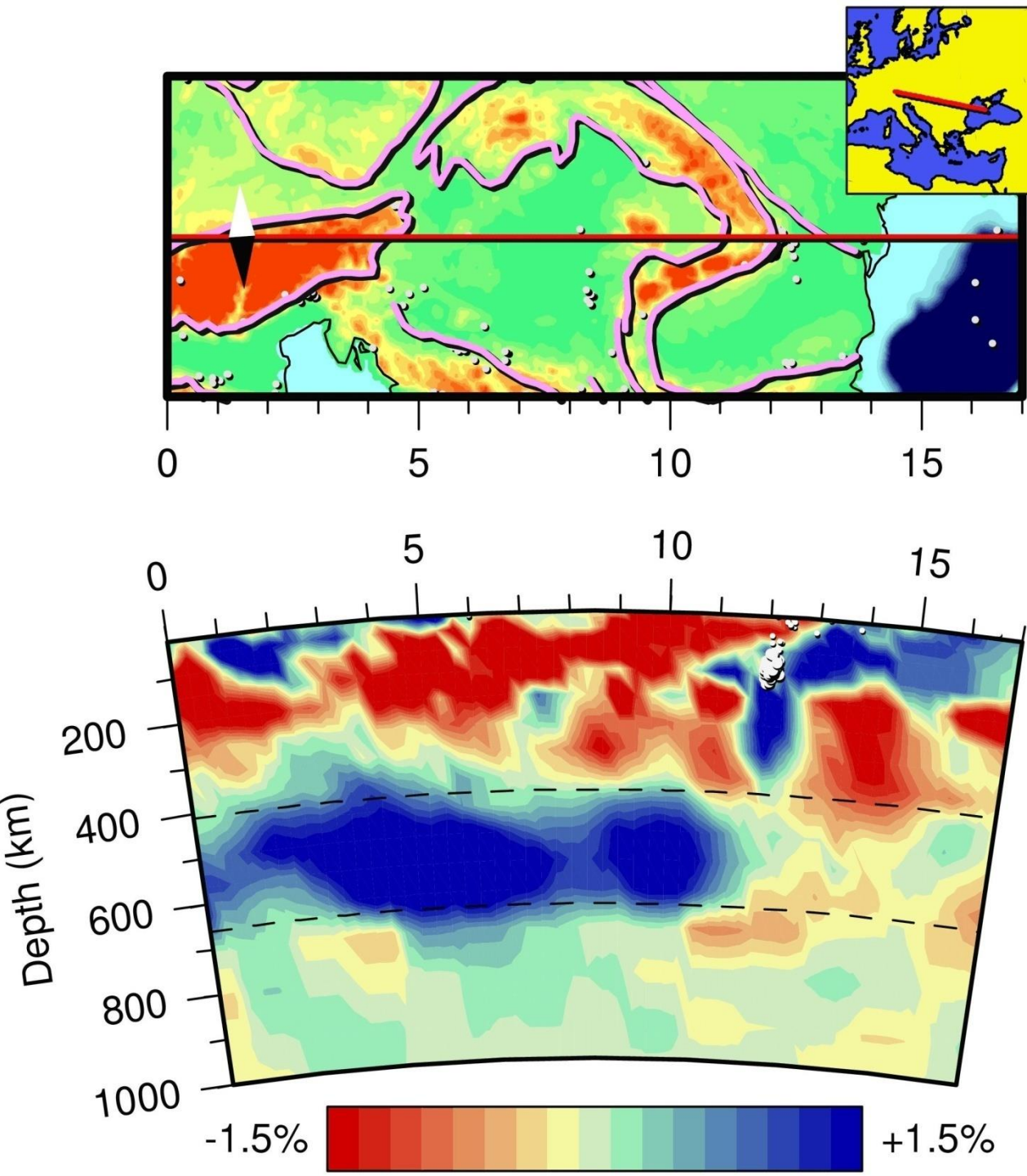
California Institute of Technology



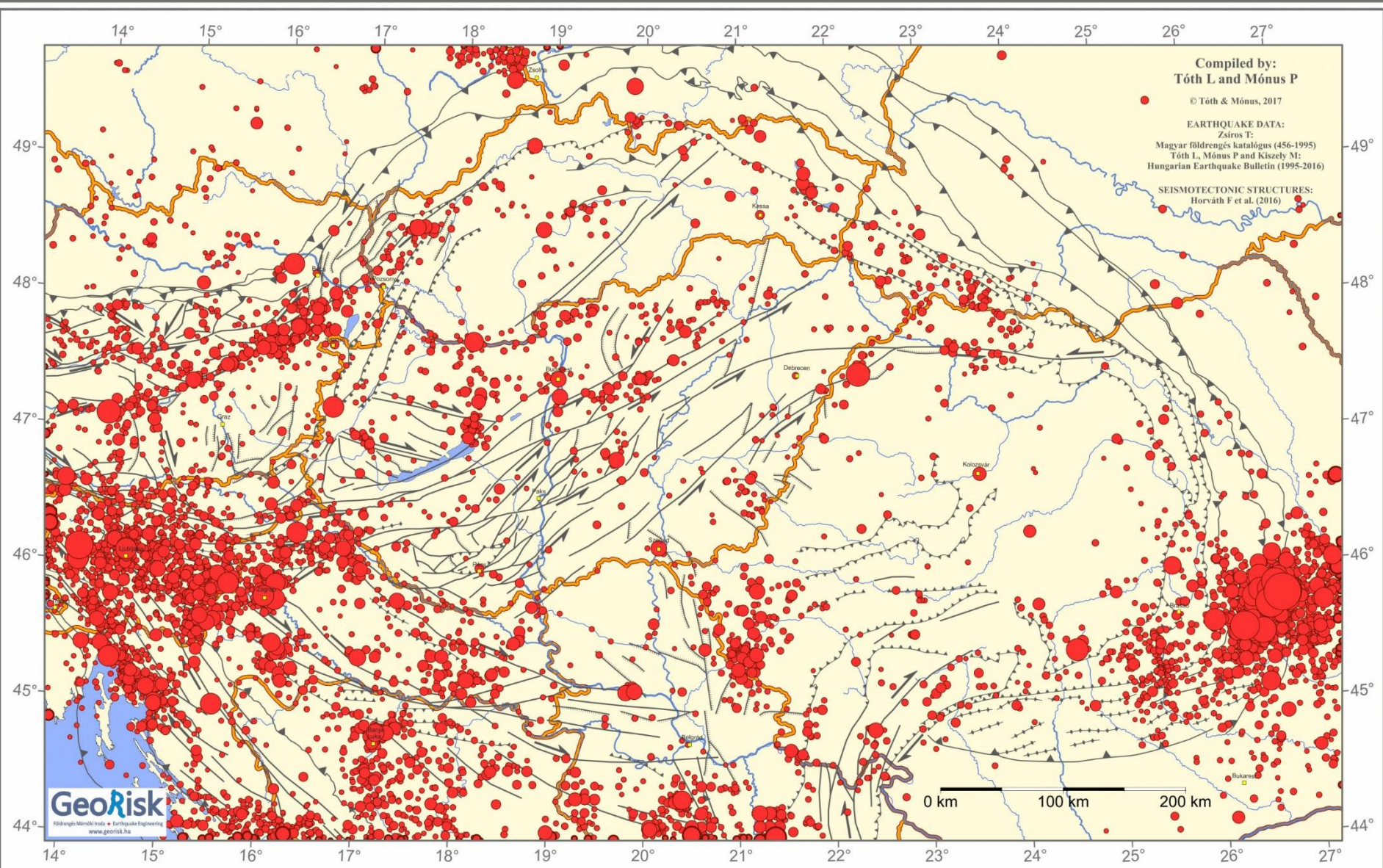
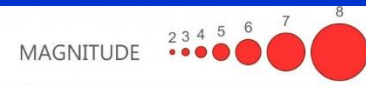
Data Source:
Imagery - ETOPO2
Earthquakes - USGS NEIC Earthquake Catalog, Years 2000 - 2006, M \geq 5.0







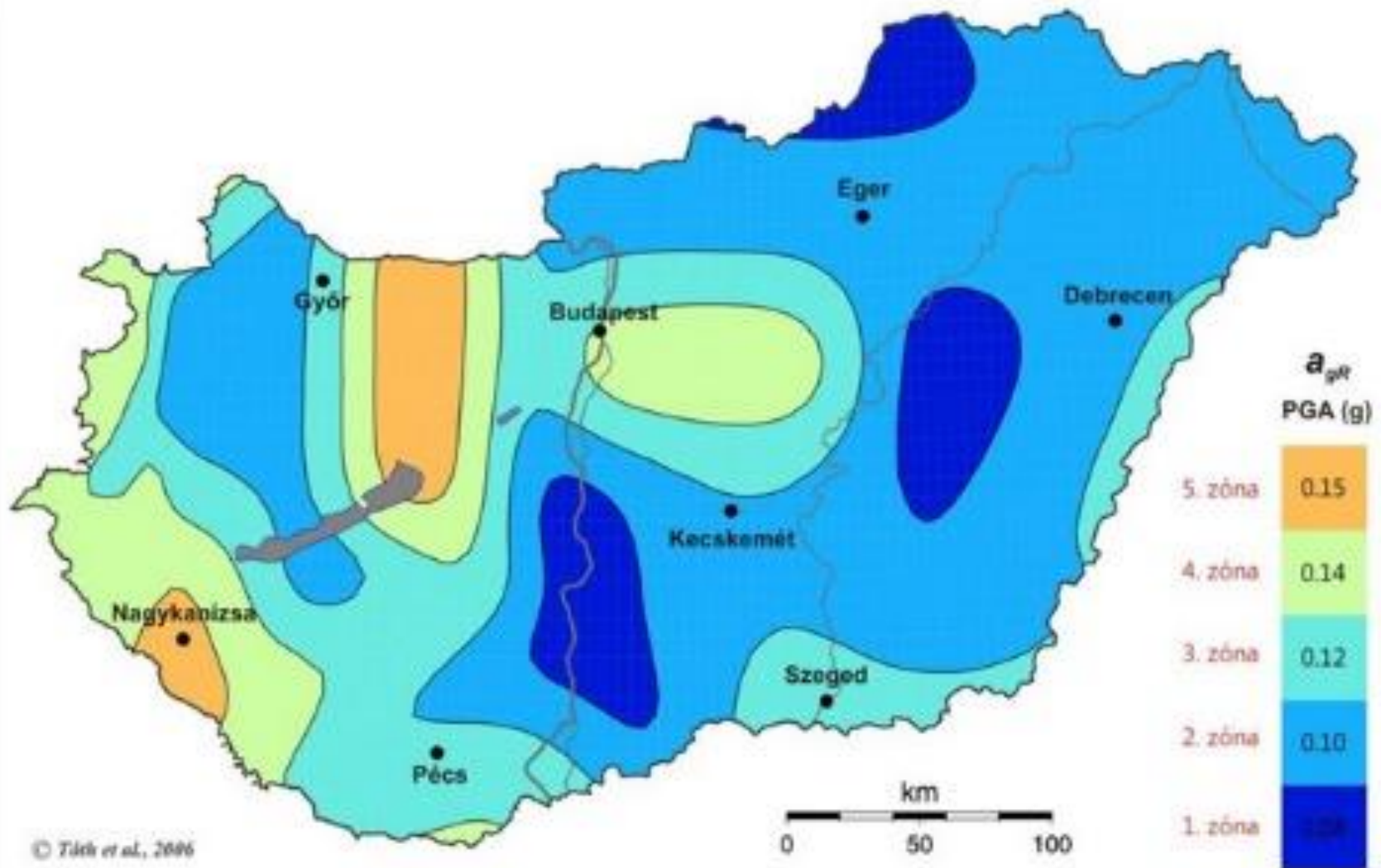
Seismotectonics of the Pannonian Basin (456-2016)



MSZ EN 1998-1 (EUROCODE 8) NEMZETI MELLÉKLET

Szeizmikus zónatérkép

Horizontális gyorsulás értékek 50 évre,
10% meghaladási valószínűség mellett
(1/475 év gyakoriság) az alapközveten, g egységben



© Táék et al., 2006

Na jó, jó, hogy gőzmozdony, de mi hajcsa'??

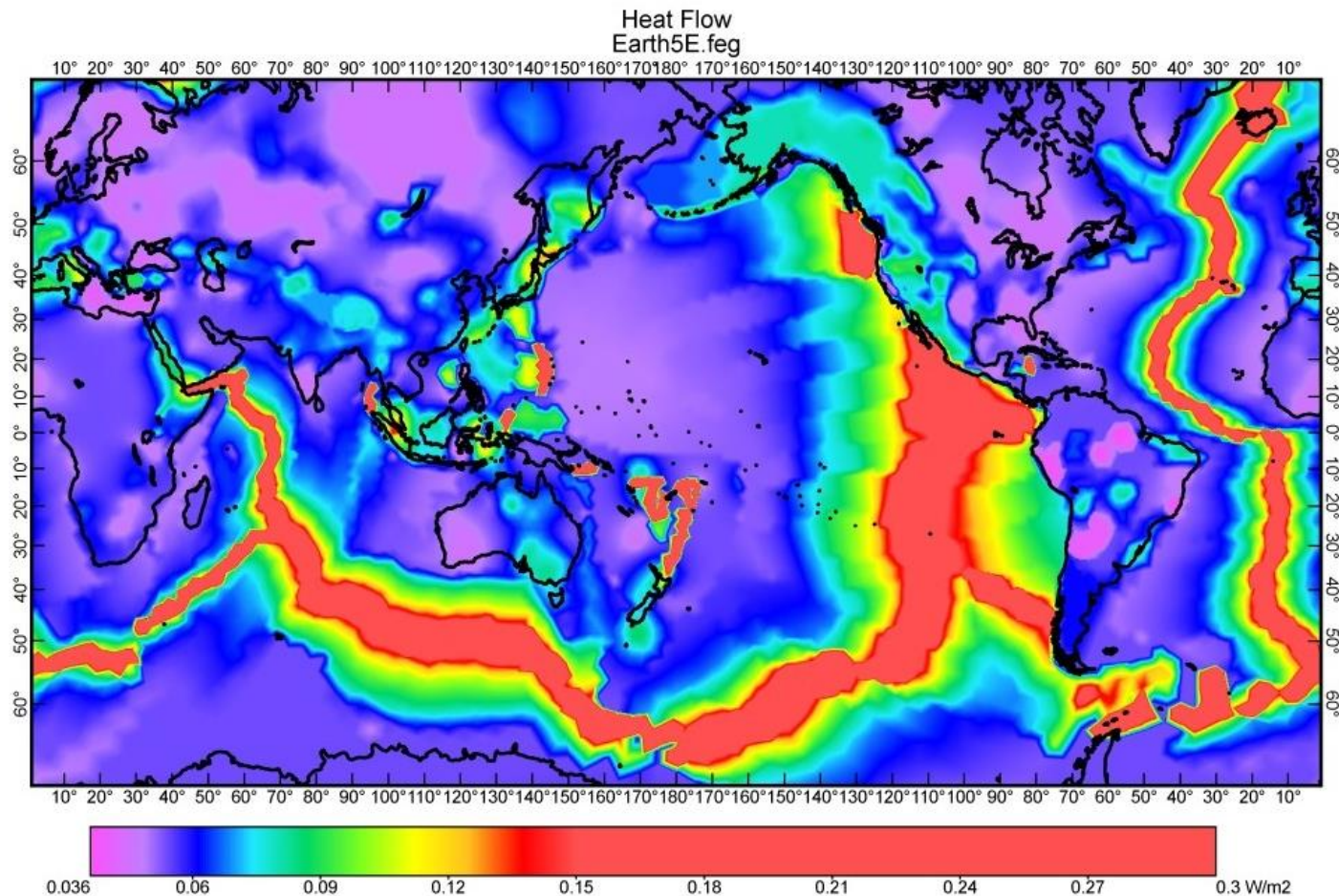
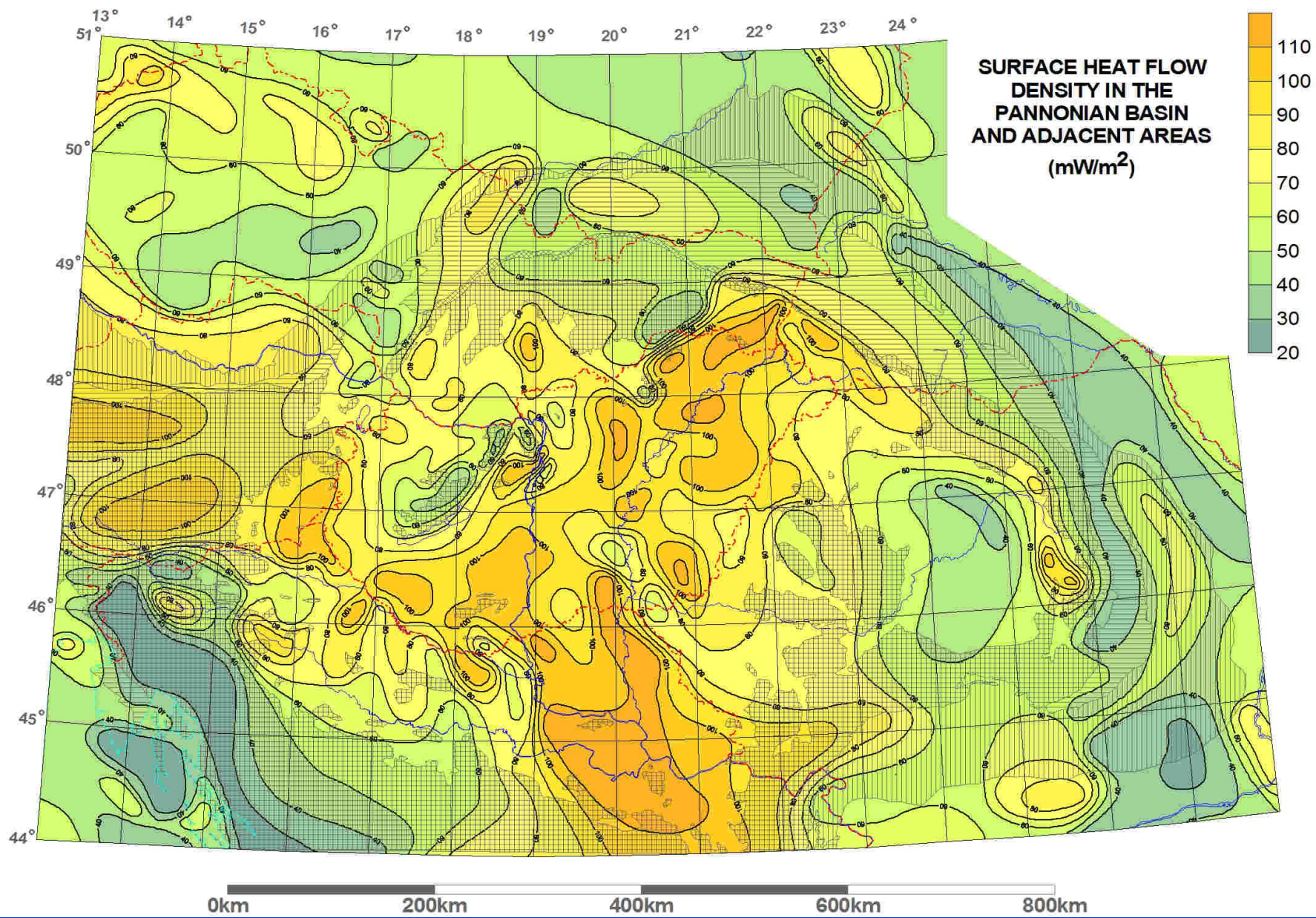
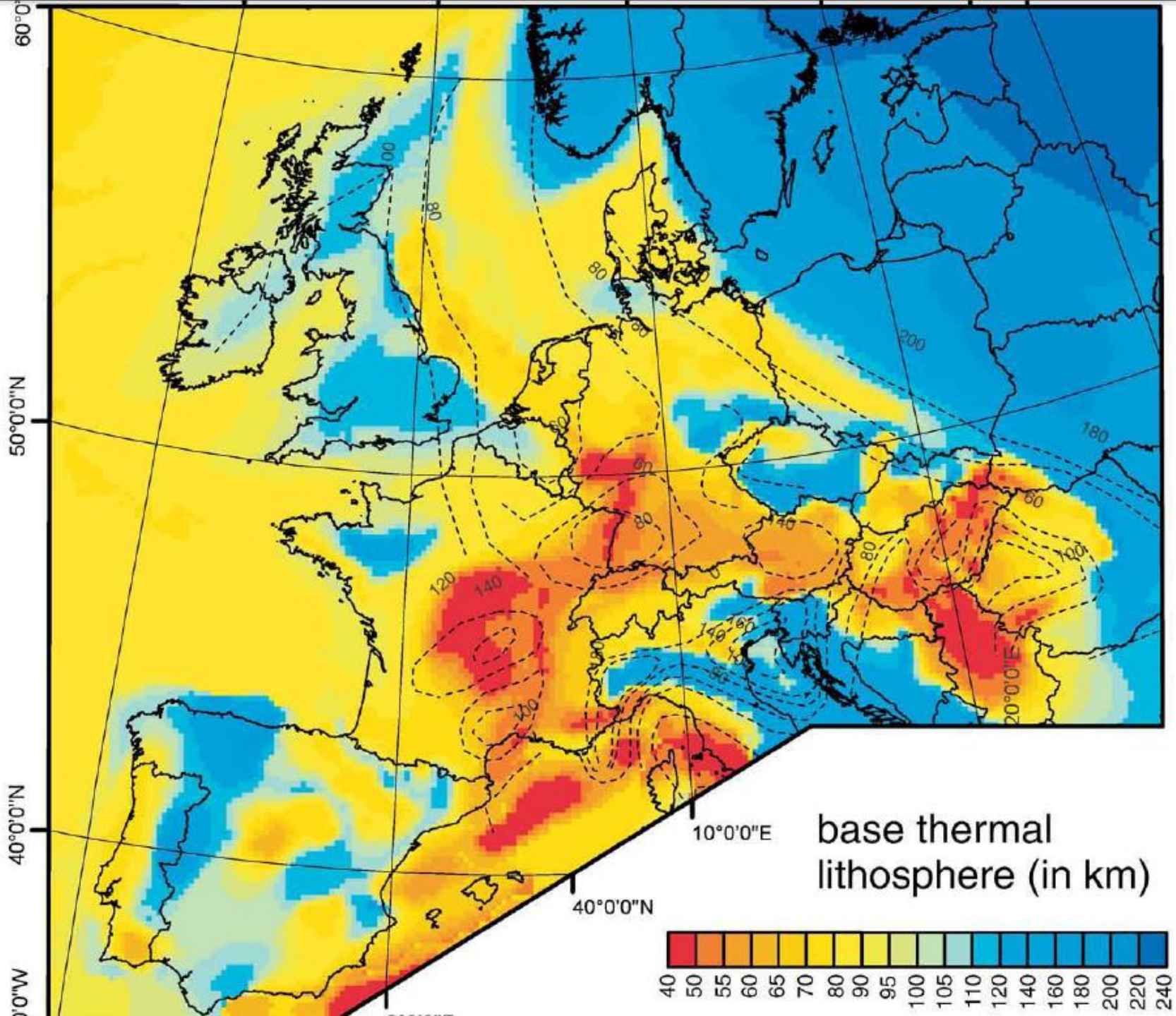


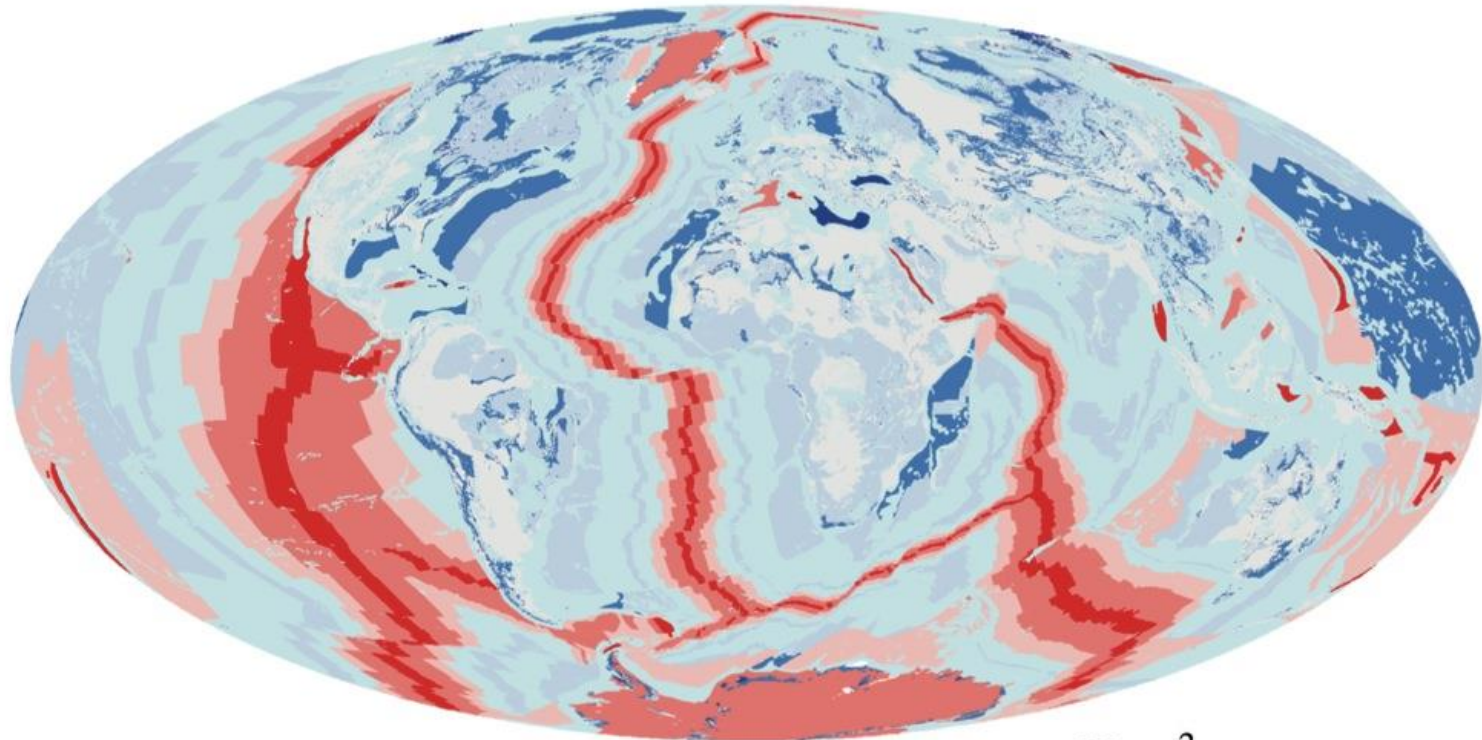
Figure 3. Composite heat-flow model obtained by merging age-dependent model heat-flow from *Stein & Stein* [1992] (where seafloor age is known from *Mueller et al.* [1997]) with interpolated heat-flow kriged from data of *Pollack et al.* [1991, 1993] and/or published maps in some continental areas. Color scale is selected to show detail in continental areas of relatively low heat-flow. All spreading ridges were assigned uniform 0.3 W/m^2 conductive heat flow along their centers.

Table 7.1 Typical concentrations of radioactive elements and heat production of some rock types

	Granite	Tholeiitic basalt	Alkali basalt	Peridotite	Average continental upper crust	Average continental crust	Average oceanic crust	Undepleted mantle
Concentration by weight								
U (ppm)	4	0.1	0.8	0.006	2.8	1.1	0.9	0.02
Th (ppm)	15	0.4	2.5	0.04	10.7	4.2	2.7	0.10
K (%)	3.5	0.2	1.2	0.01	3.4	1.3	0.4	0.04
Heat generation ($10^{-10} \text{ W kg}^{-1}$)								
U	3.9	0.1	0.8	0.006	2.8	1.1	0.9	0.02
Th	4.1	0.1	0.7	0.010	3.0	1.2	0.7	0.03
K	1.3	0.1	0.4	0.004	1.2	0.5	0.1	0.007
Total	9.3	0.3	1.9	0.020	7.0	2.7	1.7	0.057
Density (10^3 kg m^{-3})	2.7	2.8	2.7	3.2	2.7	2.7	2.9	3.2
Heat generation ($\mu\text{W m}^{-3}$)	2.5	0.08	0.5	0.006	1.8	0.7	0.5	0.02







mW m^{-2}



Földi átlagos hőáram: 90 mW/m²

Földi átlagos hőáram: 90 mW/m²

Kb. 0,1 W/m² * 500 M km² * 1M

$$50 * 1E+12 = 5E+13 \text{ W}$$

$$5E+7 \text{ MW}$$

Egy paksi blokk kb. 500 MW

$$5E+7 / eE+2 = 100000$$