

GEOLOGY AND DEEP VERTICAL SHAFTS:

**CASE STUDY FROM MAGANIK MTS.,
MONTENEGRO**



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MAIN FACTORS CONTROLLING THE GENESIS OF VERTICAL SHAFTS

- HYDROGRAPHY
- LITHOLOGY
- TECTONICS



HYDROGRAPHY

Trešteni vrh (Hill): 1980 m a.s.l.

Mededi vrh (Hill): 2139 m a.s.l.

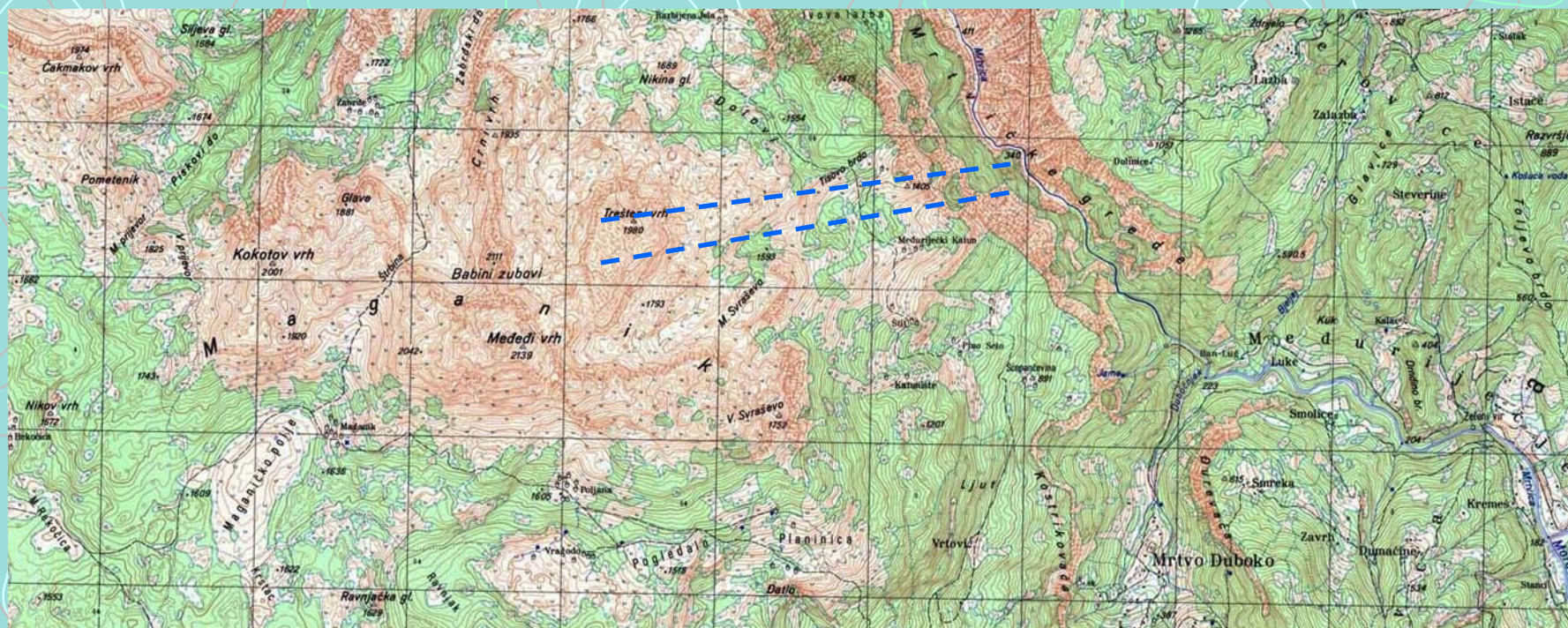
Spring of Jame in the base of the gorge
of the Mrtvice River: 300 m n.m.

Difference: more than 1600 m

Annual precipitations cca 3000 mm



Direction of the underground drainage





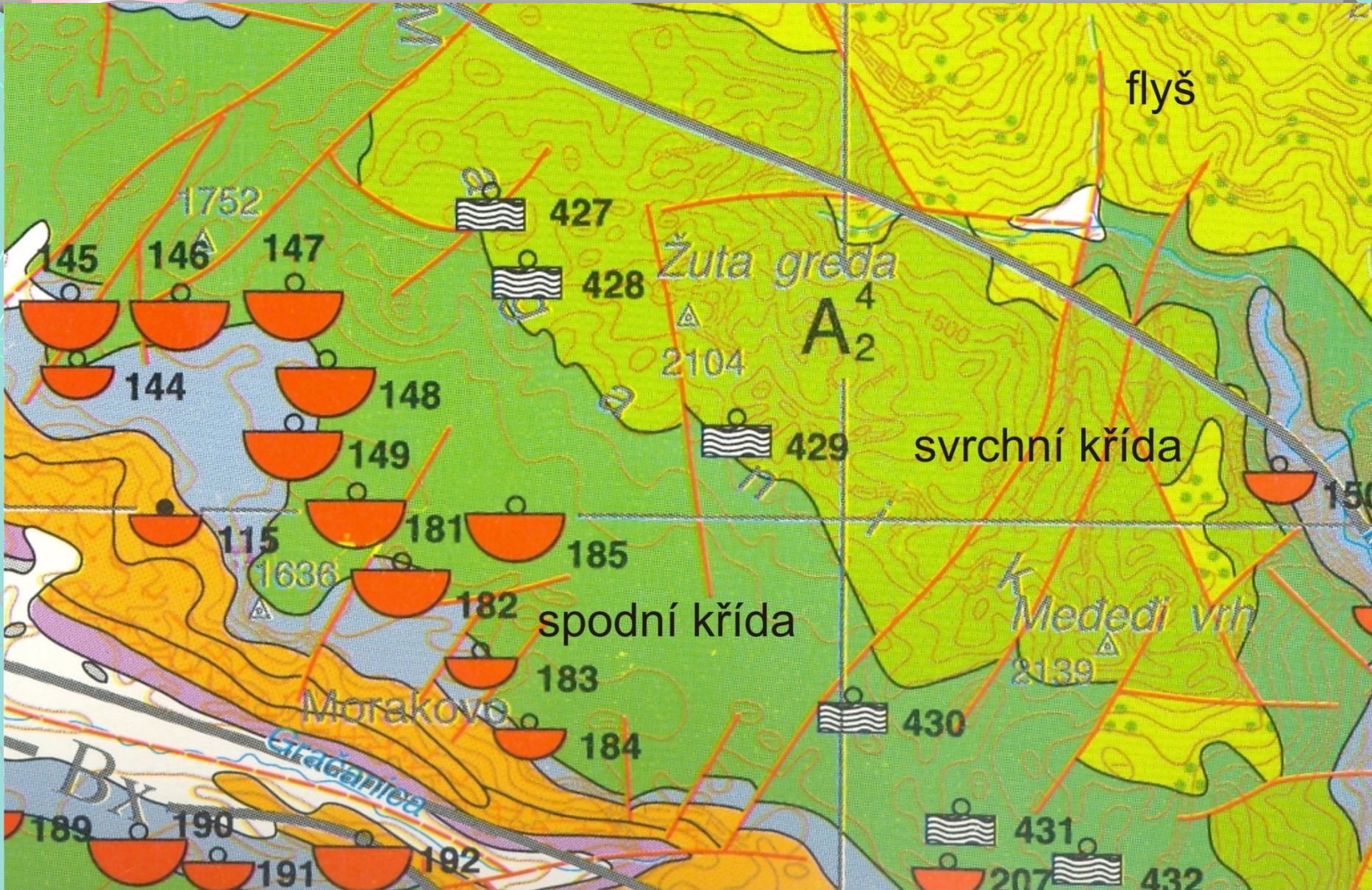




A hand holding a geological hammer is positioned at the top left of the slide. The hammer has a pink handle and a dark grey head. A long, dark grey horizontal bar extends from the hammer head across the top of the slide.

LITHOLOGY

Maganik Mts. are built of very pure
Lower to Upper Cretaceous carbonates:





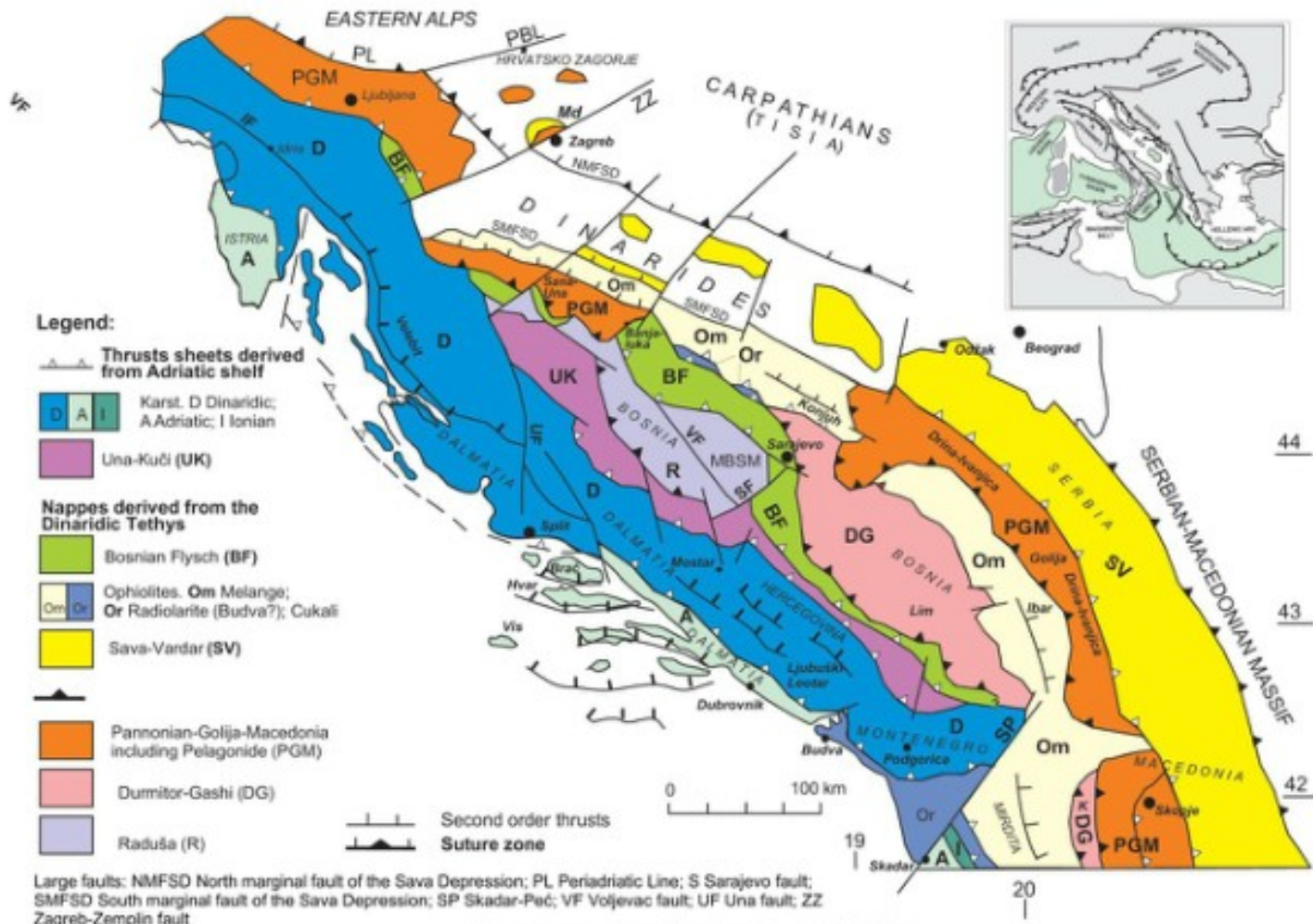




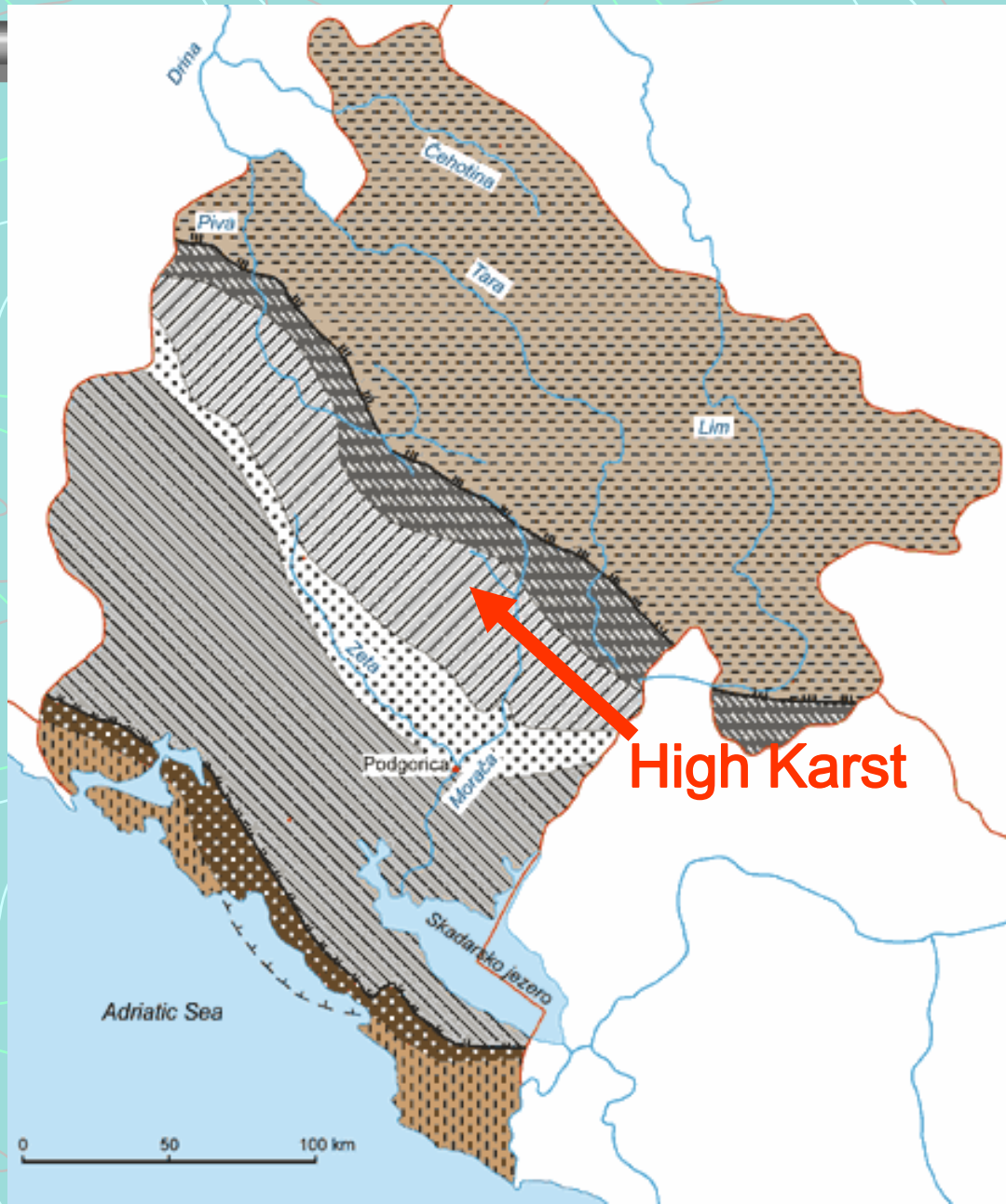
A hand holding a geological hammer is positioned at the top left of the slide. The hammer has a pink handle and a dark grey head. A thick grey horizontal bar spans the top of the slide.

TECTONICS

- **Dominance of subhorizontal bedding**
- **Substantial influence of subvertical joints**
- **Contrast with allochthonous neighbourhood**
- **Comparison with other European and world verticals**



Tectonic map of the Dinarides (Hrvatović, 2003)



High Karst





Aither

Medv\$dice

Pahyl2

Pod so

Pahyl

Nyx

Uletadla

M10

M9

M11

Stan

Kemp

MostEk

M4

DVAZUBY

M5

Bbb

Krkaycl

Aaa

M13

M3

M7

M8

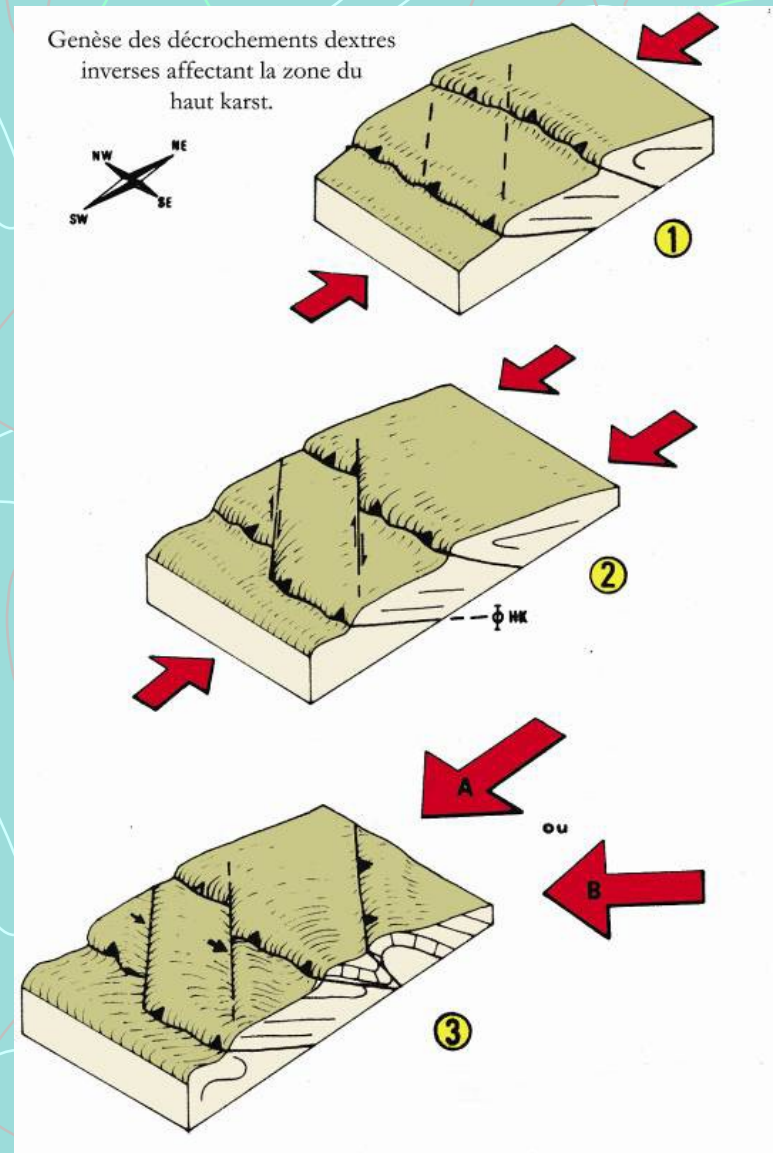
M6

M12MededIVRH



GENERALIZED SKETCH OF THE HIGH KARST TECTONICS:

(taken from the Report on Orjen Expeditions of French colleagues)



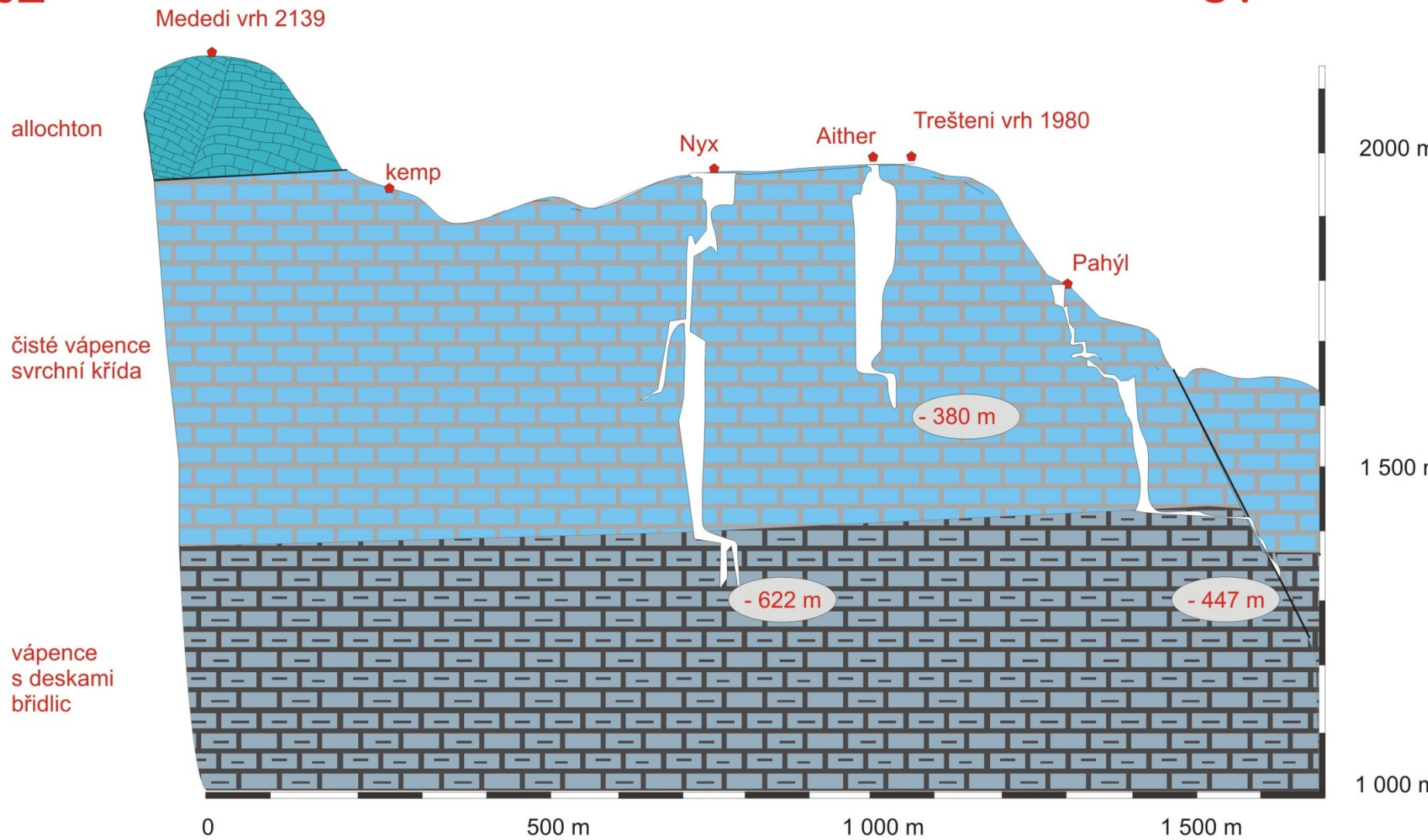


SCHEMATICKÝ GEOLOGICKÝ ŘEZ MEDEDI VRH - TREŠTENI VRH

J. Otava 2011

JZ

SV















Examples from „world“ verticals:



Provatina, Astraka
Plateau, NW Greece

Vrtoglavica
Slovenia





Miao Keng – explored by Hong Meigui Cave Exploration Society



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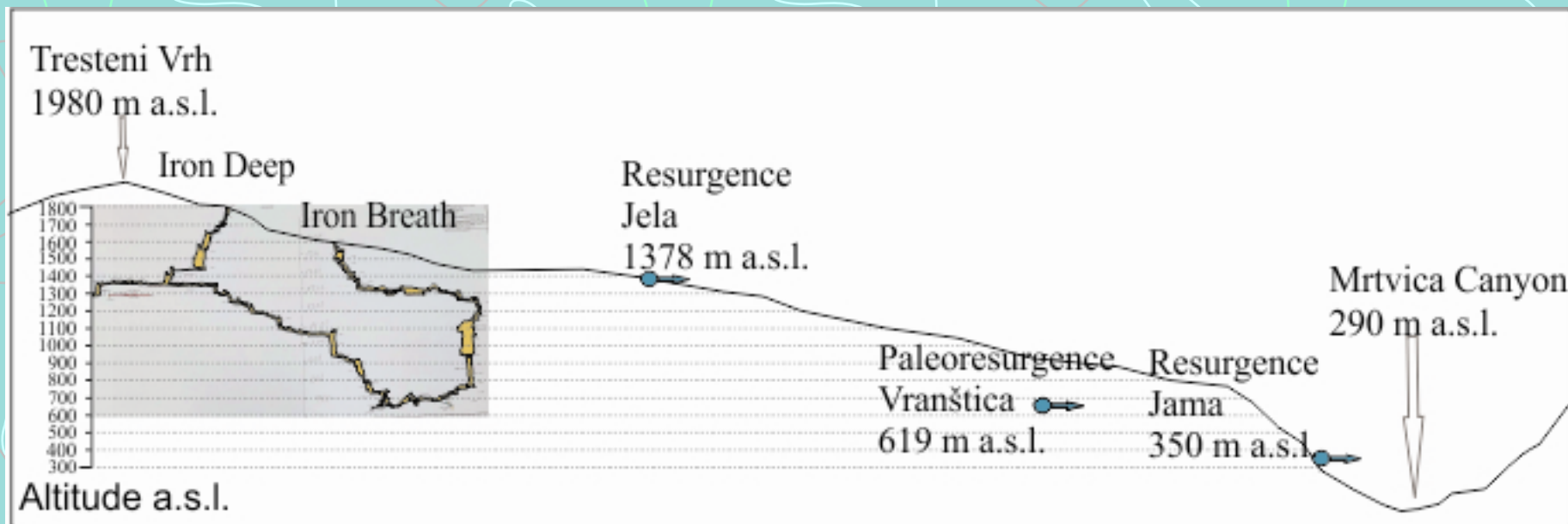






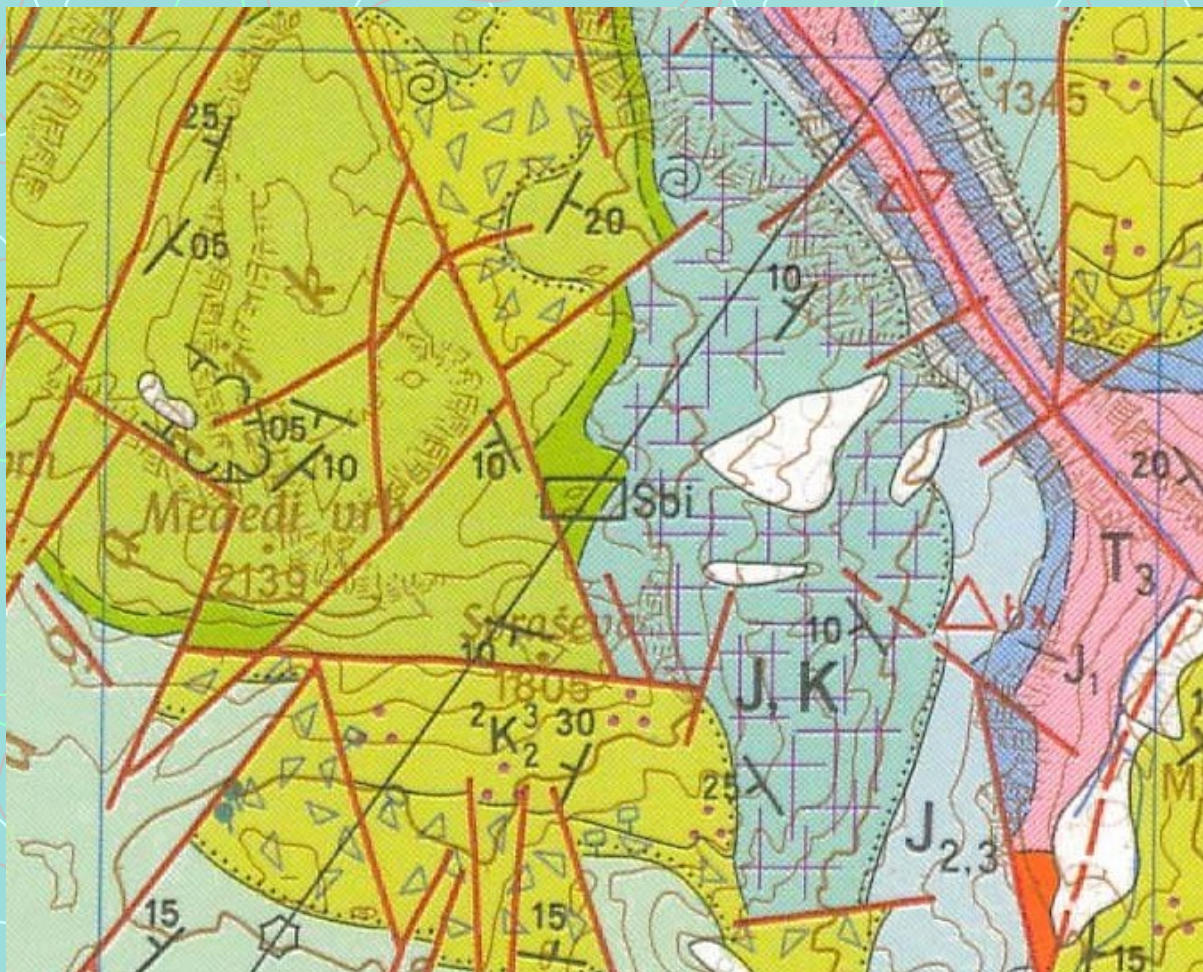
První cena za největší objev českých jeskyňářů v zahraničí v roce 2012:
Skupina Suchý žleb - propast Iron deep -1026 m, Maganik, Černá Hora

Jeskynní úrovně Maganiku a paleohydrografie kaňonu Mrtvice, Černá Hora 2022



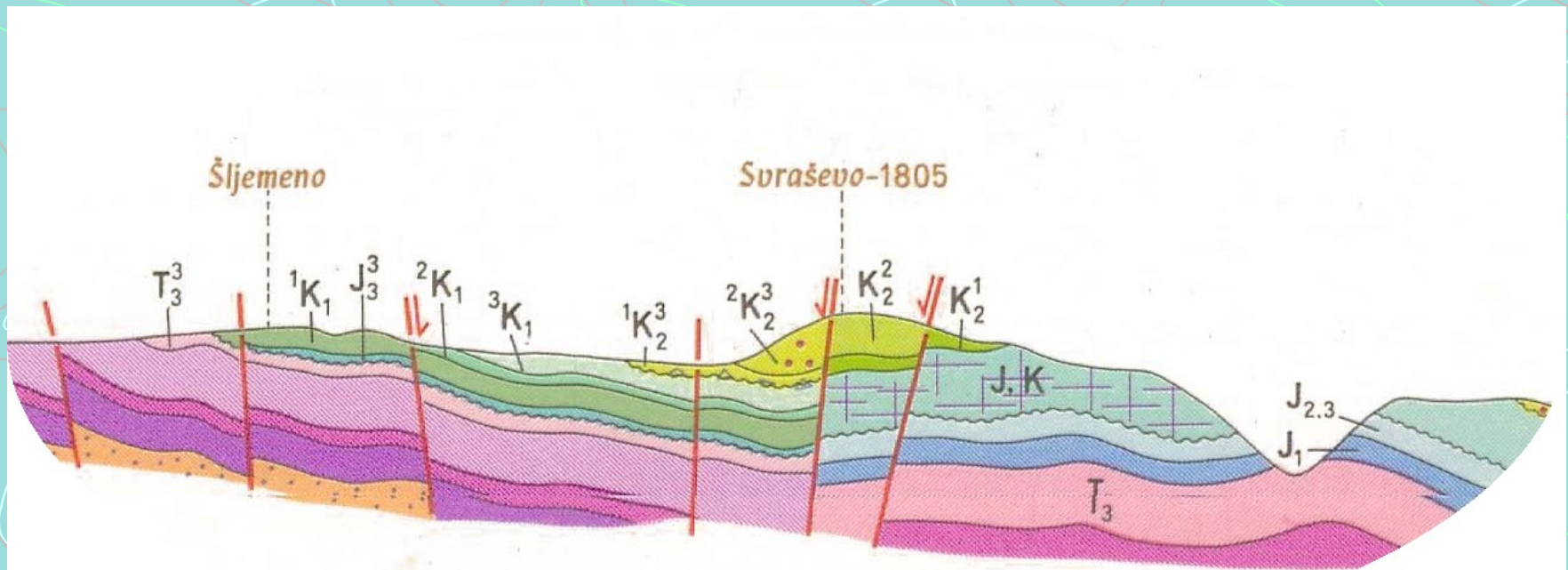
GEOLOGICKÁ MAPA MAGANIKU

Šírka mapy ca 5 km



GEOLOGICKÝ ŘEZ MAGANIK-MRTVICA

Šířka řezu ca 5 km







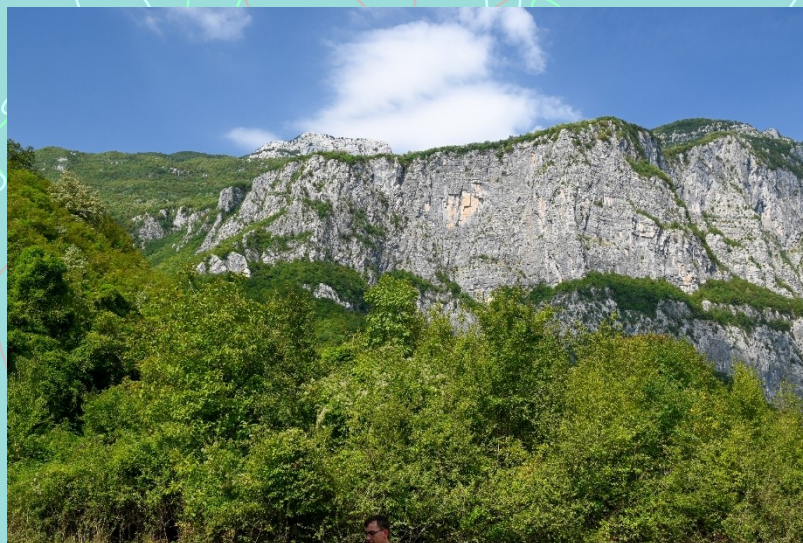


SCHÉMA ZALEDNÉNÍ ČERNÉ HORY

