

# **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













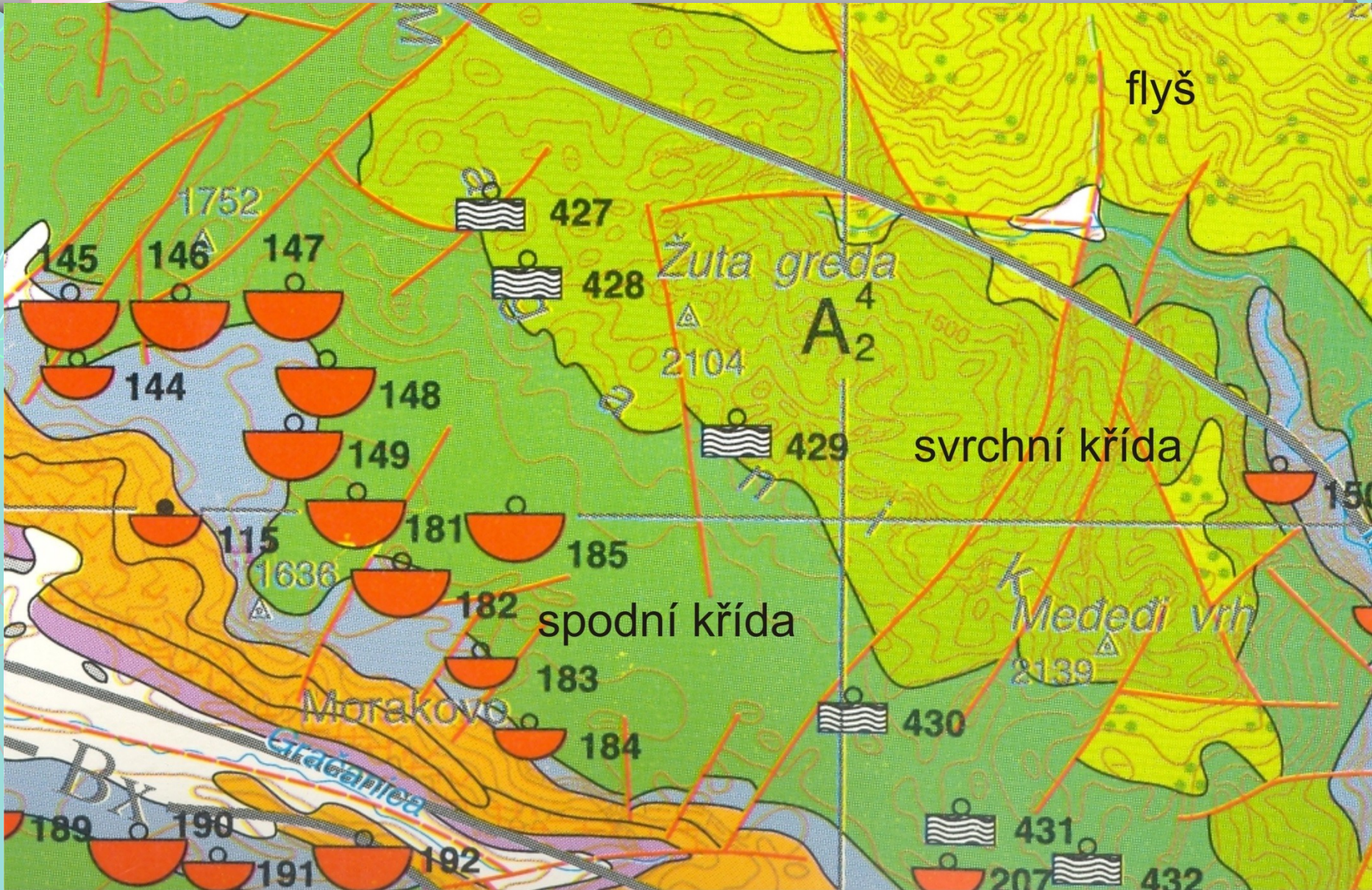




# LITHOLOGY

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













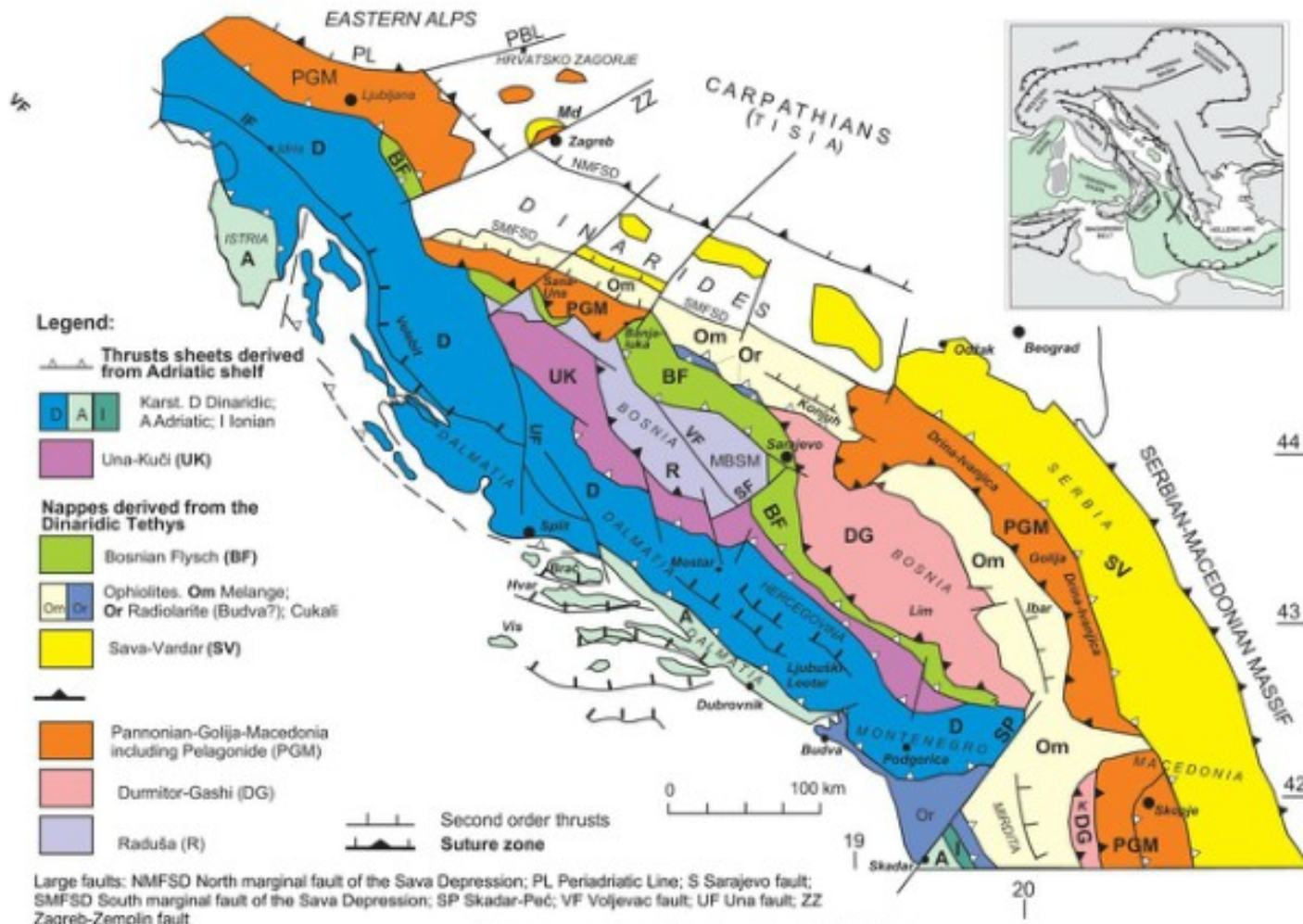




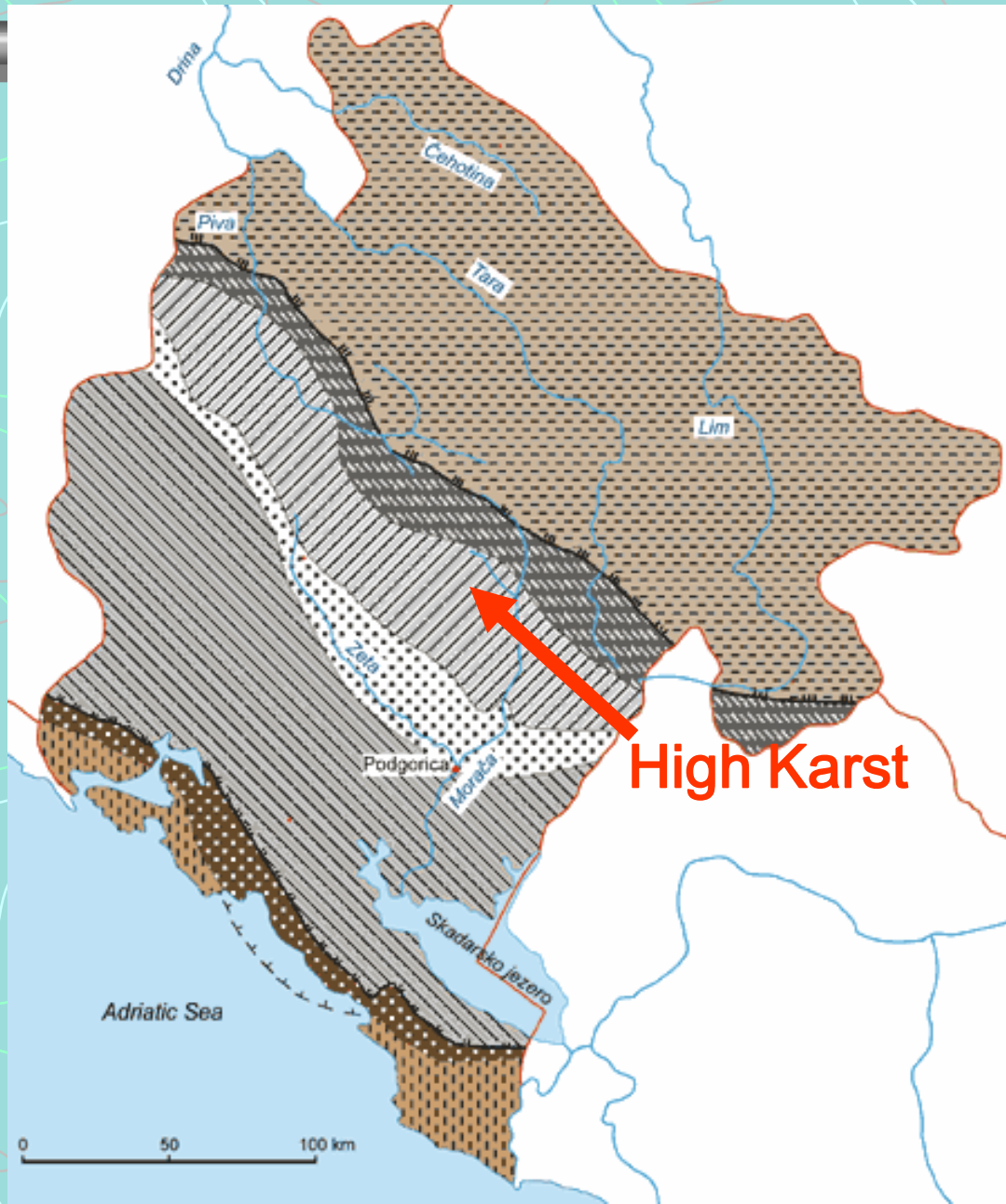
A hand holding a geological hammer, positioned at the top left of the slide. The hammer has a pink handle and a dark head.

# **TECTONICS**

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















Aither

Medv\$dice

Pahyl2

Pod so

Pahyl

Nyx

Uletadla

M10

M9

M11

Stan

Kemp

MostEk

M4

DVAZUBY

M5

Bbb

Krkaycl

Aaa

M7

M8

M6

M13

M3

M12MededIVRH

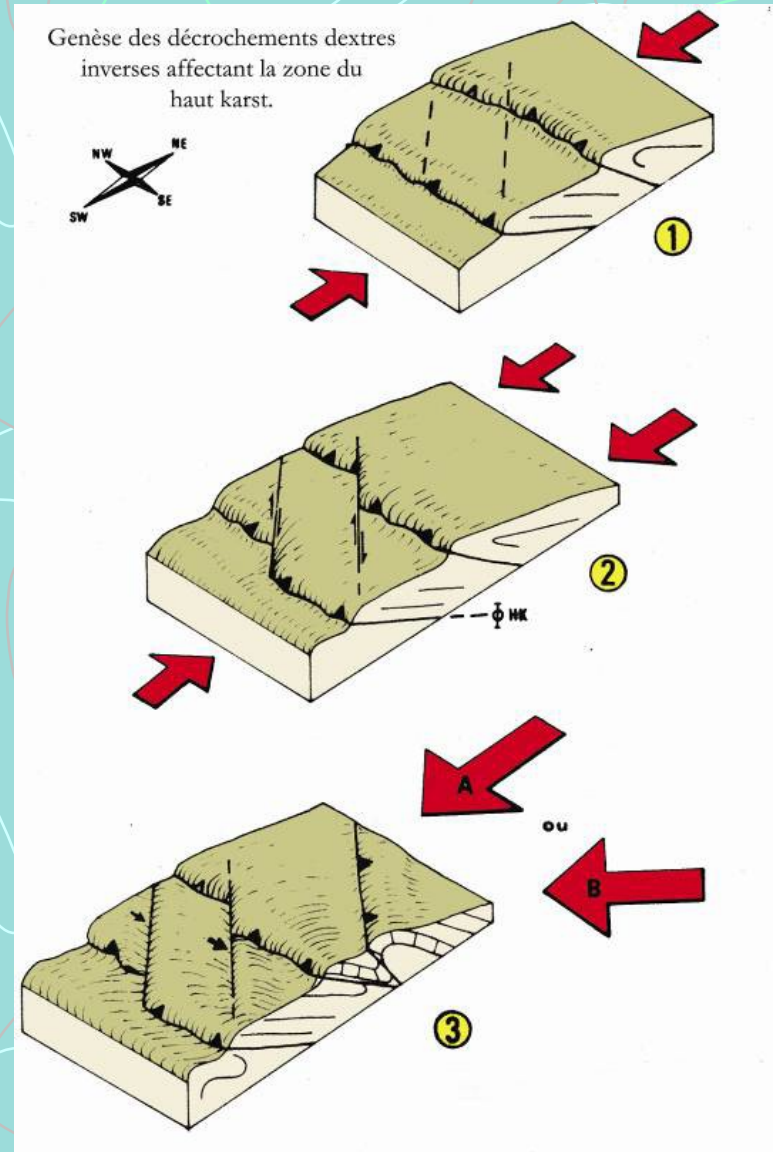






# GENERALIZED SKETCH OF THE HIGH KARST TECTONICS:

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







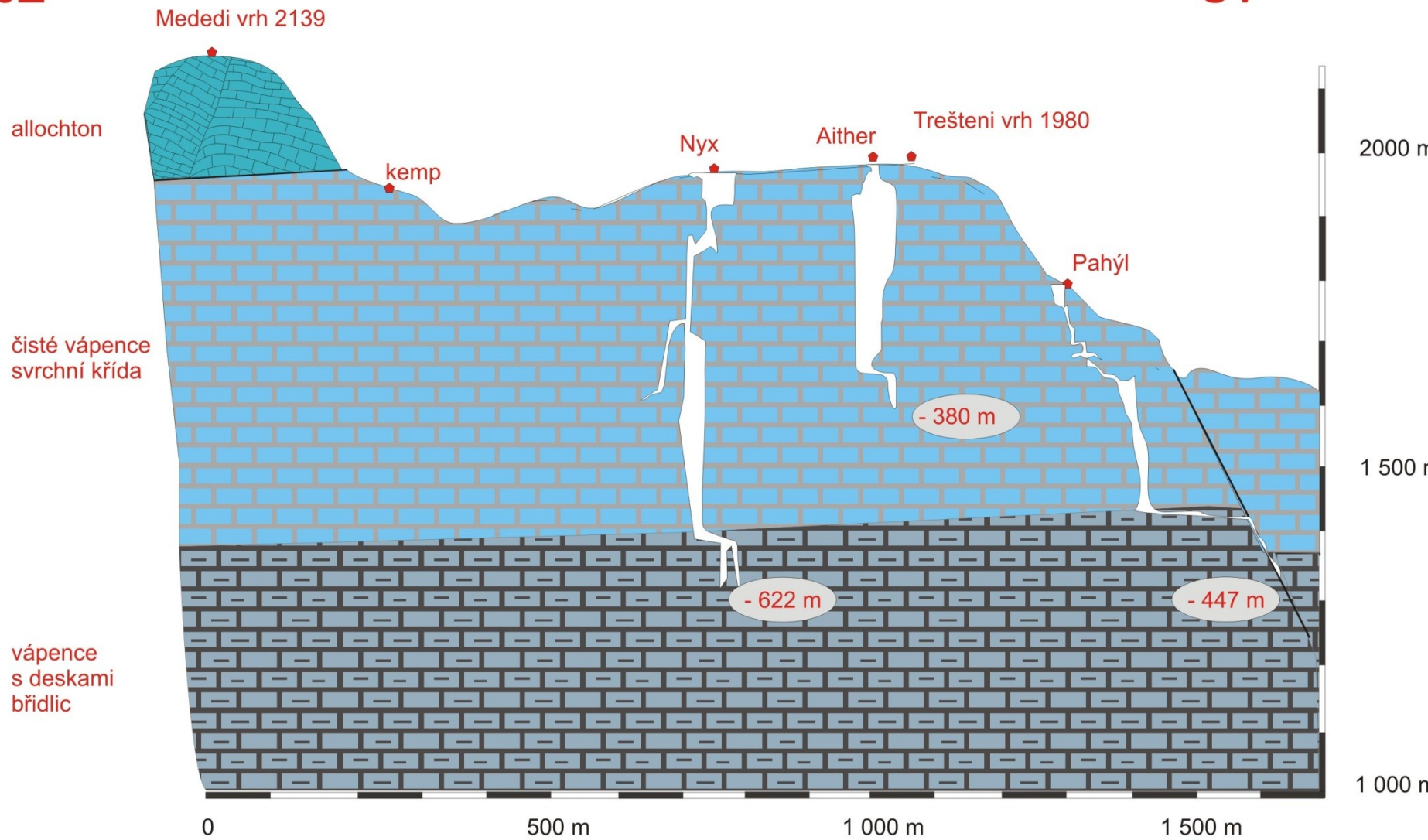


# SCHEMATICKÝ GEOLOGICKÝ ŘEZ MEDEDI VRH - TREŠTENI VRH

J. Otava 2011

JZ

SV















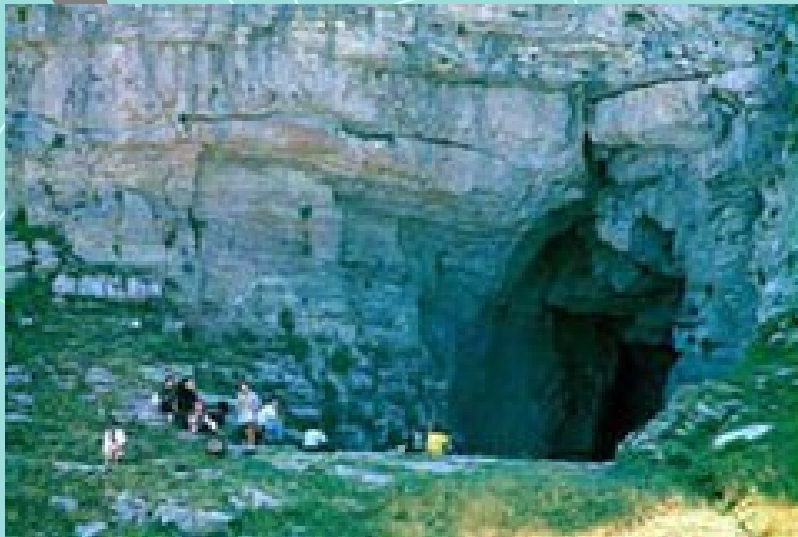








# Examples from „world“ verticals:



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