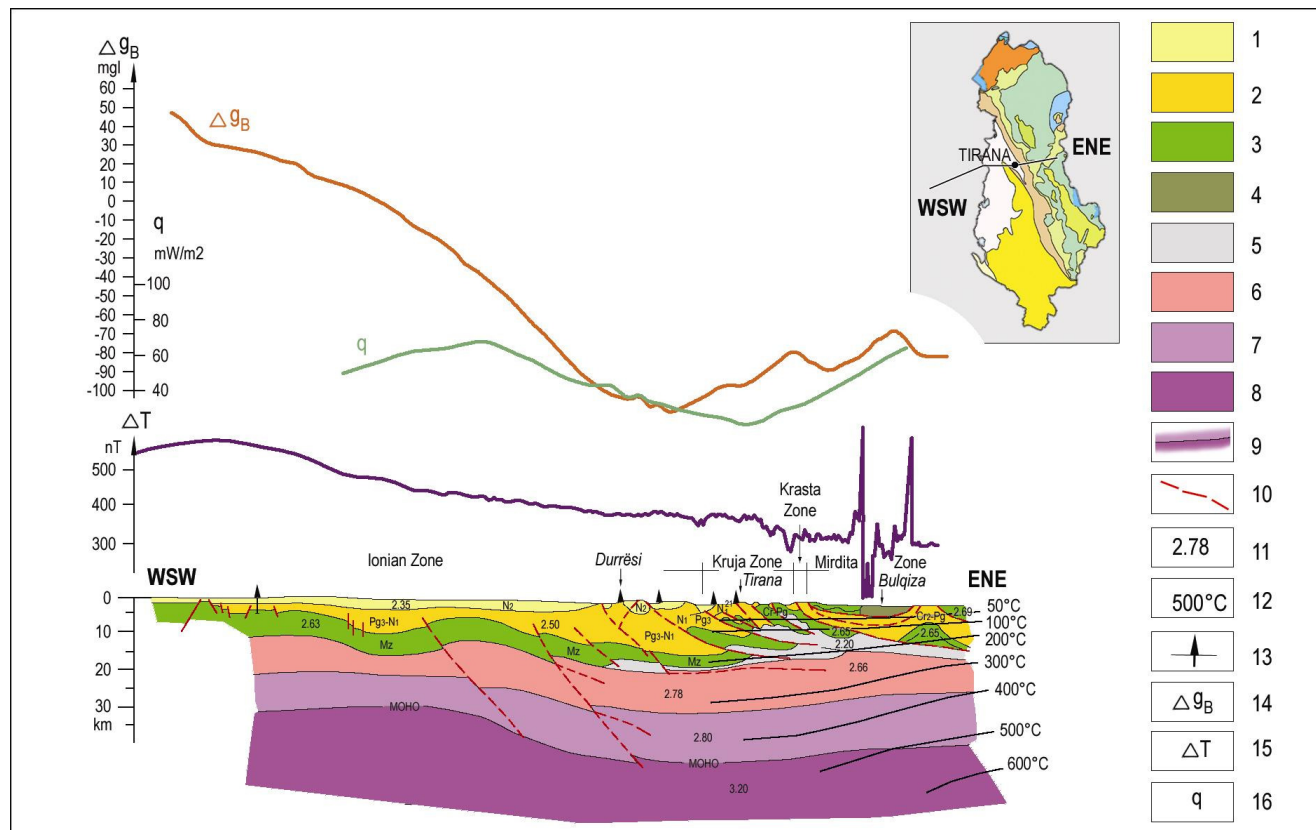


Section of Geophysics has given great contribution in development of the *geophysical scientific research* in Albania:

Regional Geophysics (1967 until present)

(L. Lubonja, A. Frasheri, S. Bushati, Nishani P., Silo V.)

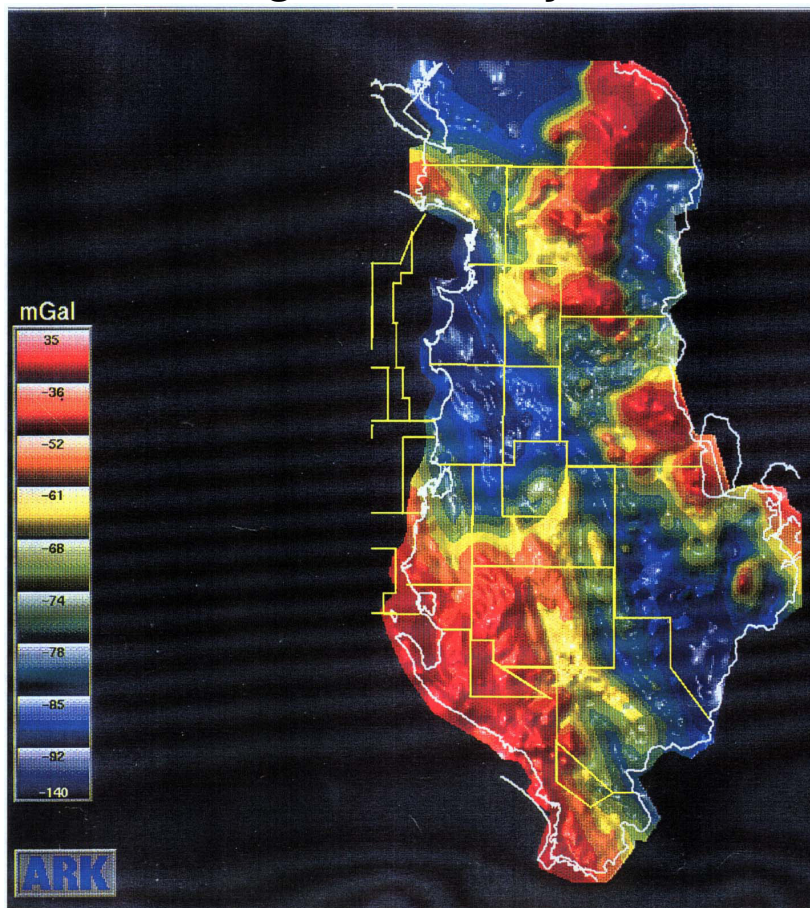


Gravity (1998) and Magnetic (1997-) Maps of Albania, at scale 1:200.000,

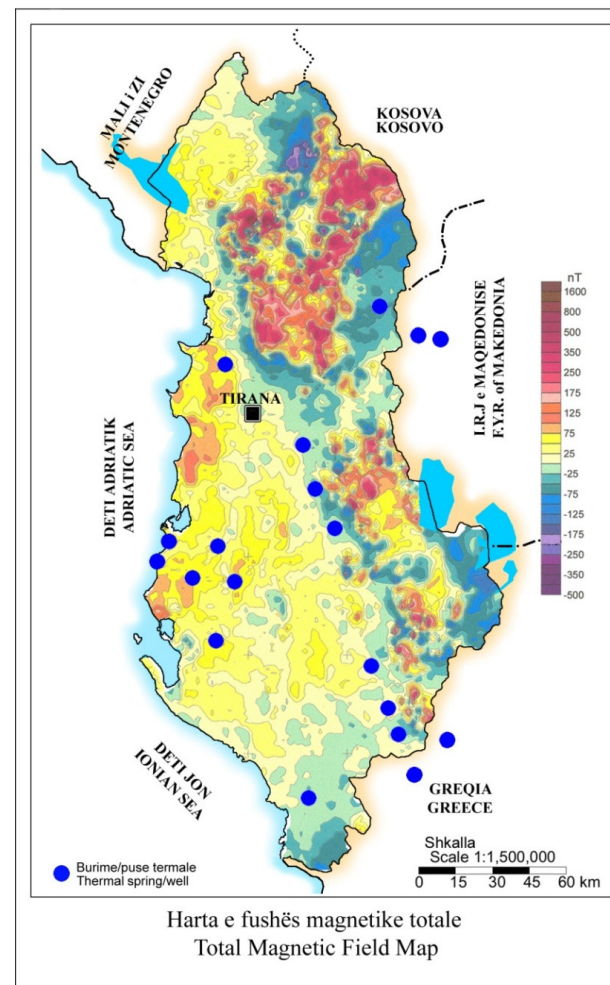
Performed by Geophysical Center, Geological Survey of Albania.

Scientific Leader: Academic, Professor, Dr. Salvatore Bushati.

GRAVITY MAP Bouguer Anomaly

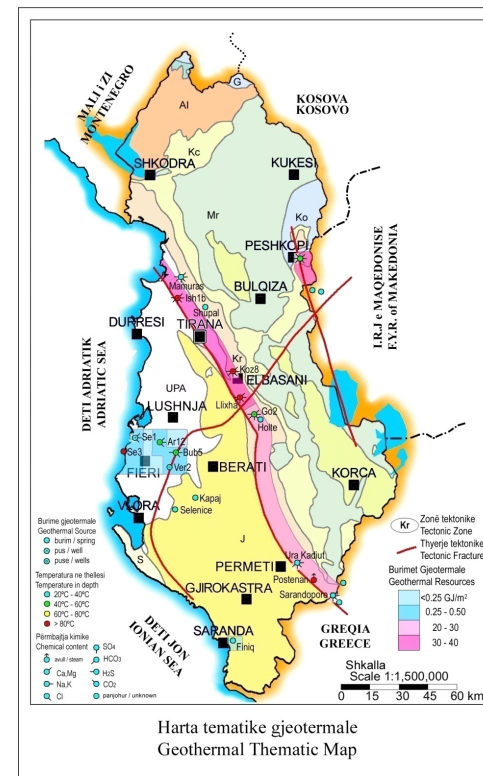
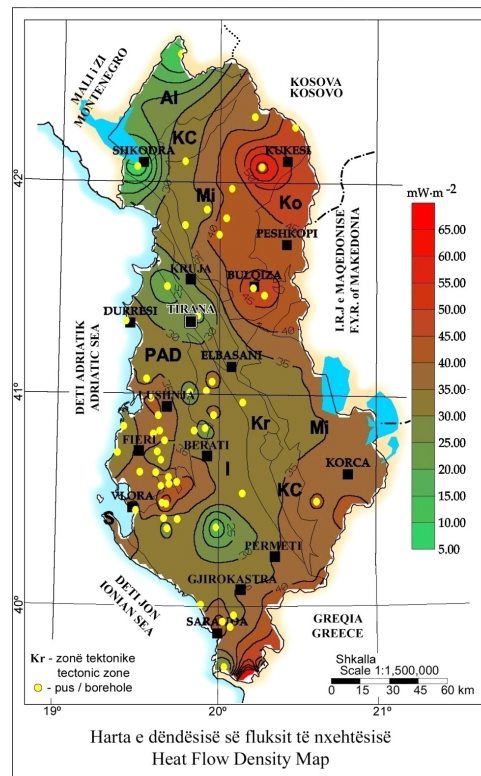


MAGNETIC MAP (T)



Geothermal studies (Since 1989 until present)

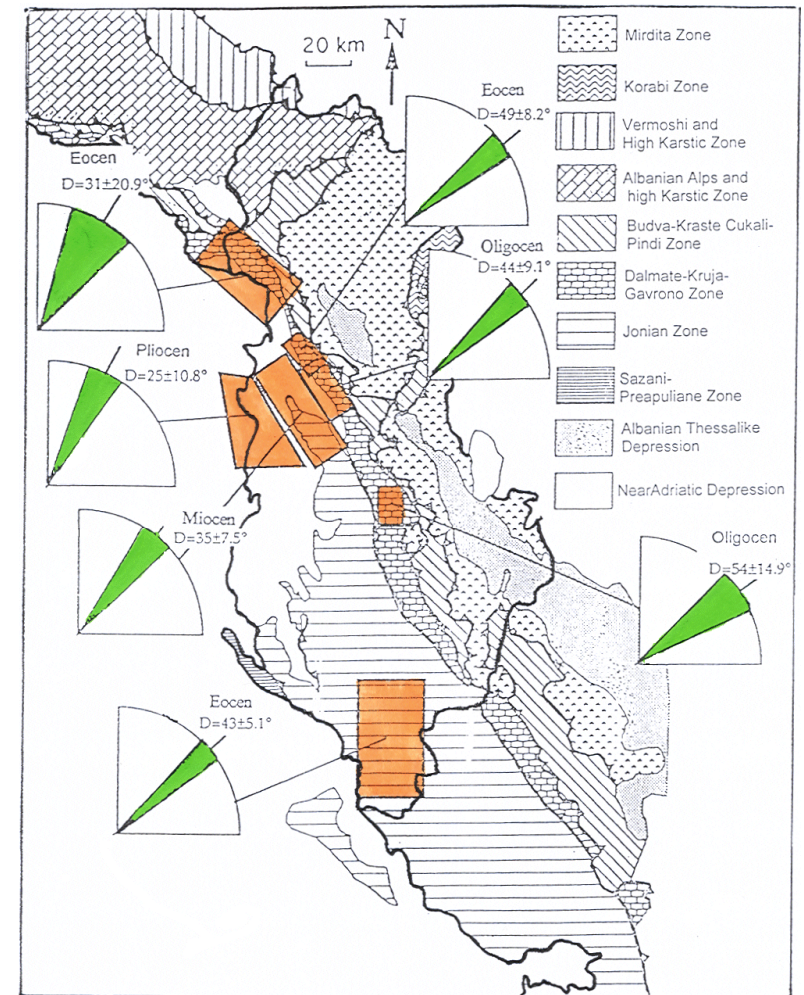
- Joint project: - Faculty of Geology and Mining
 - Institute of Geophysics, Academy of Sciences, Czech Republic, Prague.
 (Frasheri A., Cermac V., Lico R., Bushati S., et al.)
- Temperature Map of Albania at 100; 500; 1000; 2000; 3000 m depth.
 - Geothermal Gradient Map of Albania.
 - Heat Flow Density Map of Albania.
 - Geothermal Resources Map of Albania.



Paleomagnetic Studies

Joint Projects (1989-1997):

- University of Leoben, Austria (Mauritch H.J.)
- Laboratoire de Paleomagnetisme, Gif sur Yvette Paris, France (Kissel C., Lai C, Speranza F)
- University of Thessaloniki (Condopoulou D.)
- Faculty of Geology & Mining, Tirana (Bushati S, Frashëri A. , Alikaj P.)



Mining Geophysics

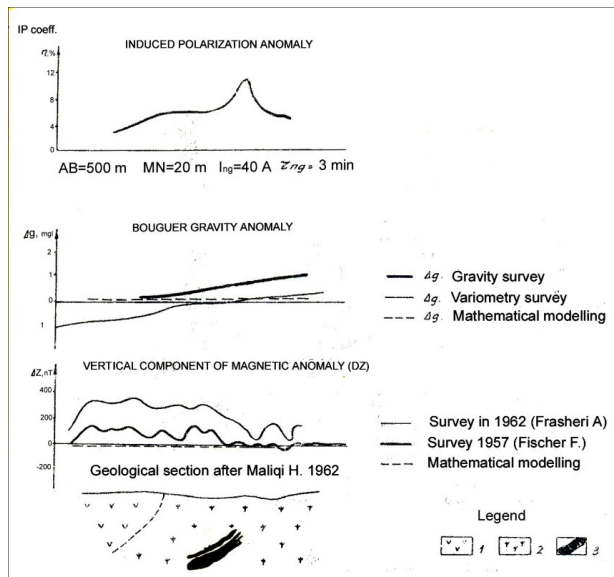
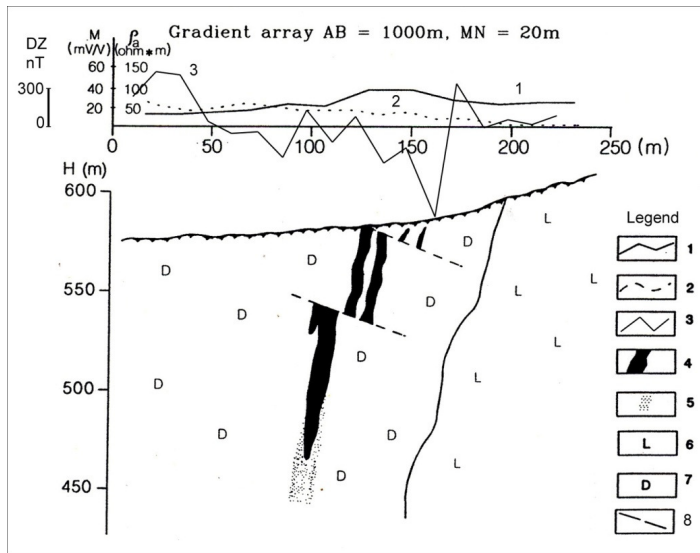
(Lubonja L., Frashëri A., Avxhiu R., Alikaj P., Bushati S.)

1. Experimentation and application in Albania of new geophysical methods for the exploration of copper and chrome ores:

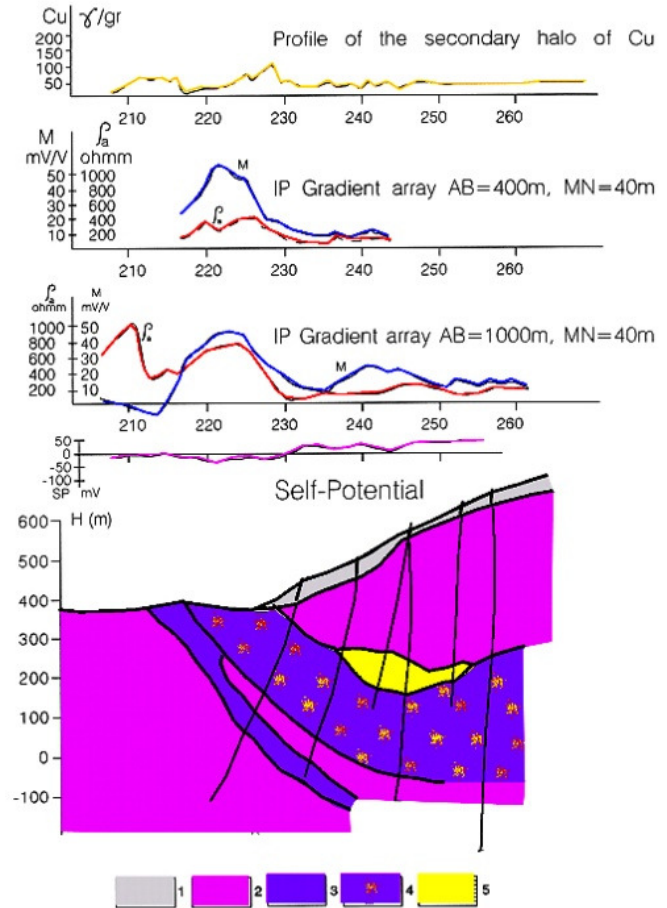
- Induced Polarization (1962-),
- Magnetic micro-survey (1967-),
- IP and RD Real Section (1978-),
- Depth Investigation Increasing of Mining Geophysics (1984-).
- Physical and Mathematical Modeling, inversion(1973-)

2. Extension of the application field of the geophysical methods in the search for:

- chrome,
- copper,
- asbestos,
- bauxite,
- placer of heavy, rare and precious minerals,
- Geotechnical and environmental engineering investigation,
- Hydrogeological exploration,
- Application of Self-potential method for direct exploration of oil and gas reservoirs



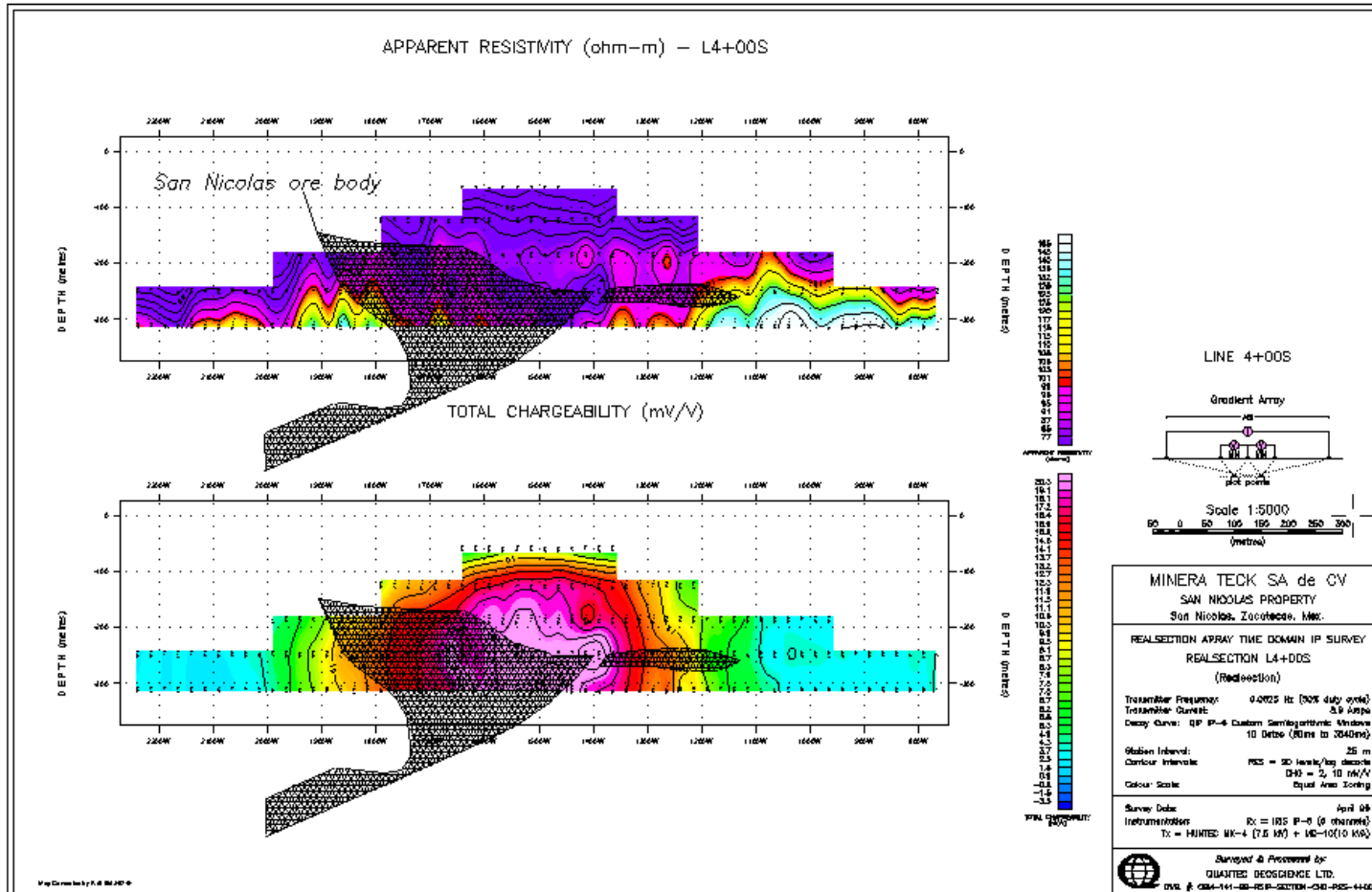
Geophysical Exploration of chromites



Geophysical Exploration of copper

IP Real Section: New survey and interpretation geoelectrical method (1978-) (Alikaj P.)

Historic case:
Saint Nicolas, Property, Polymetallic Deposit, Mexico



Oil and Gas Exploration

Integrated geological-geophysical Oil and Gas Exploration and deep wells design
(Nishani P., Lubonja L., Frashëri A.) (1964-), Silo V. (1973-).

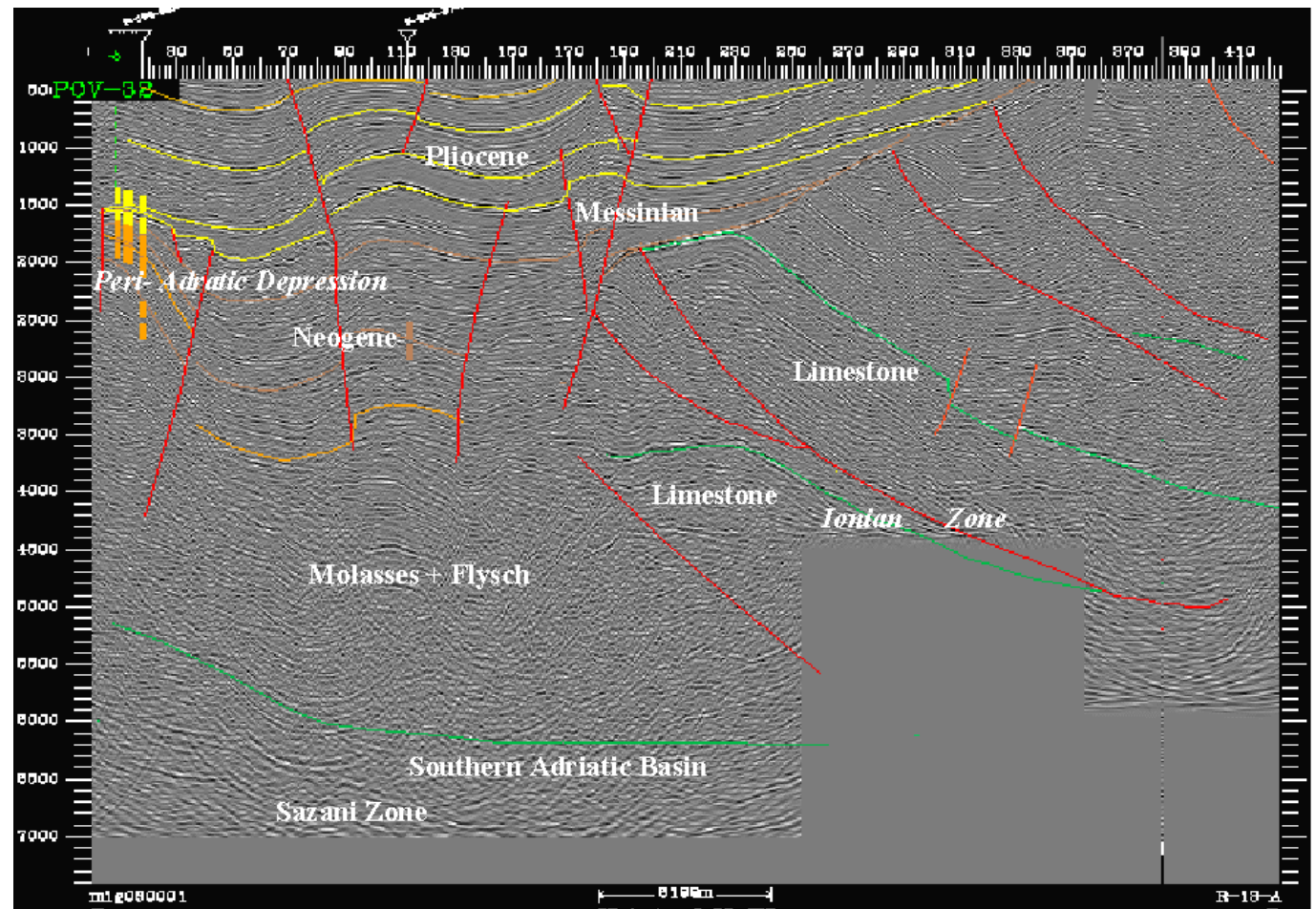
Well logging studies, overpressures studies (R. Liço) (1964-)

Ardenica-Kolonja

Seismic Line

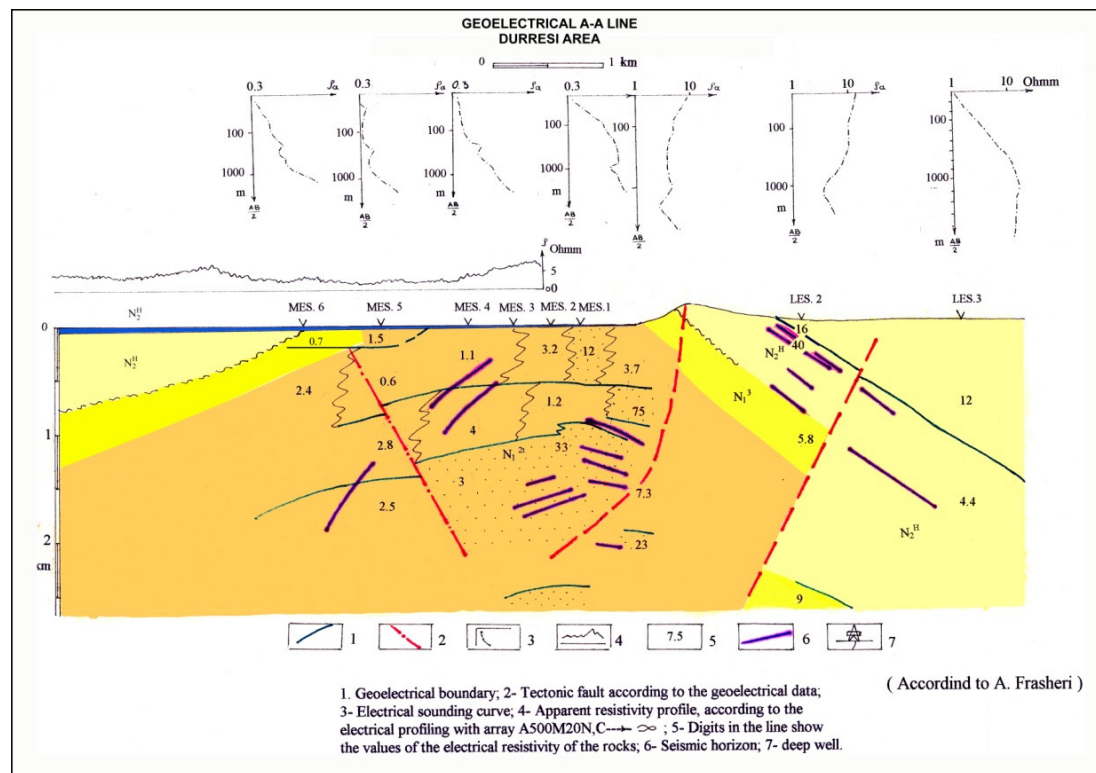
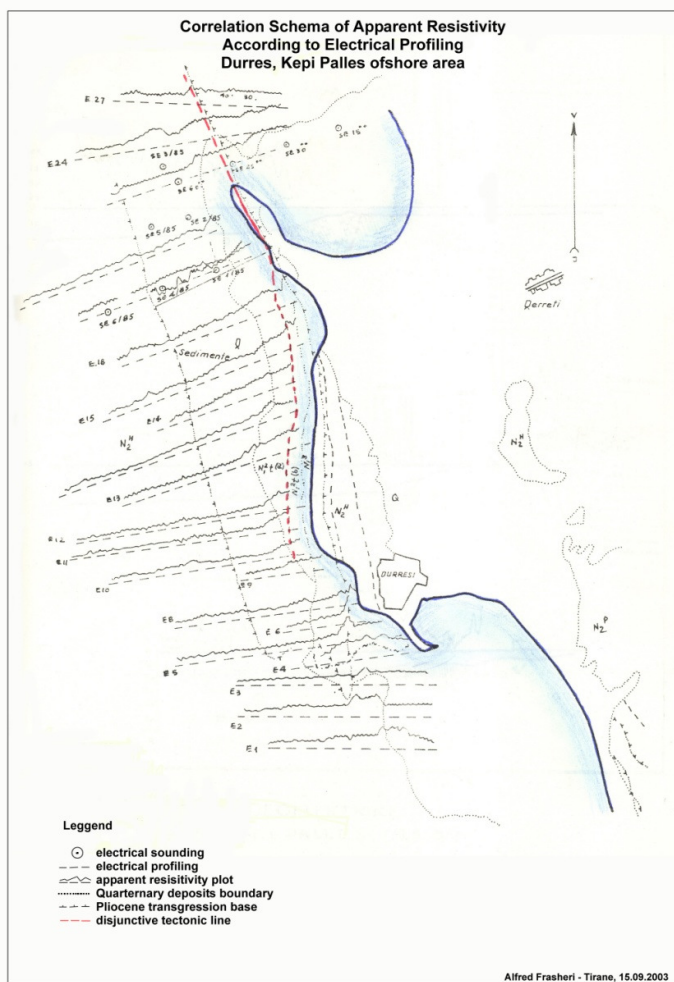
(Nishani P., coauthor
of the well design)

(After ALBPETROL)



Marine Geoelectrical surveys in Albanian Adriatic Shelf (Frashëri A.) (1975-1991).

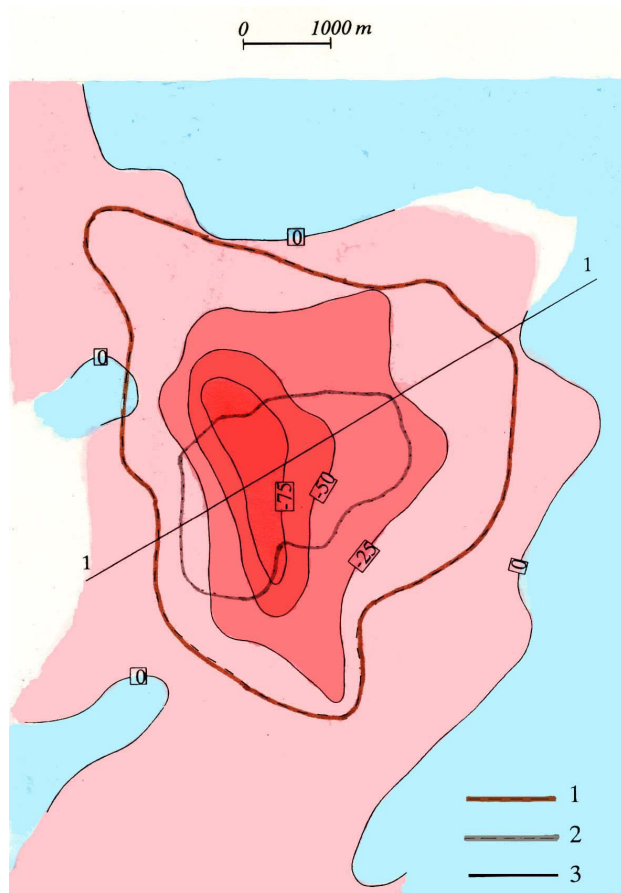
Durrresi-Palla Cape Adriatic Shelf area



Direct Oil Exploration

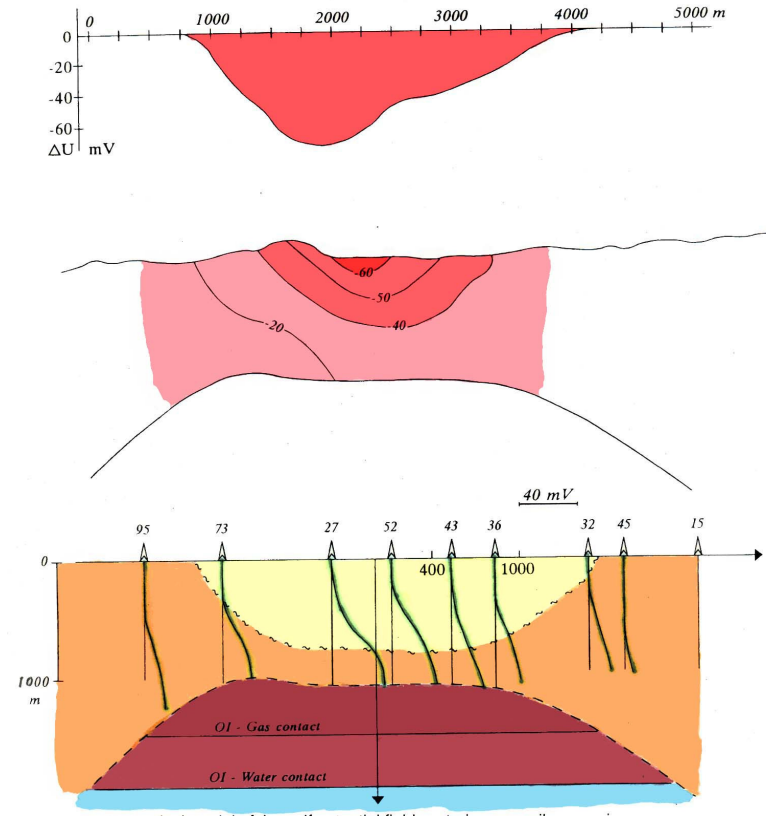
(Frashëri A., Liço R.) (1975-1986).

Self Potential Field Map



Self Potential Profile

Ballshi Oil and Gas Reservoir

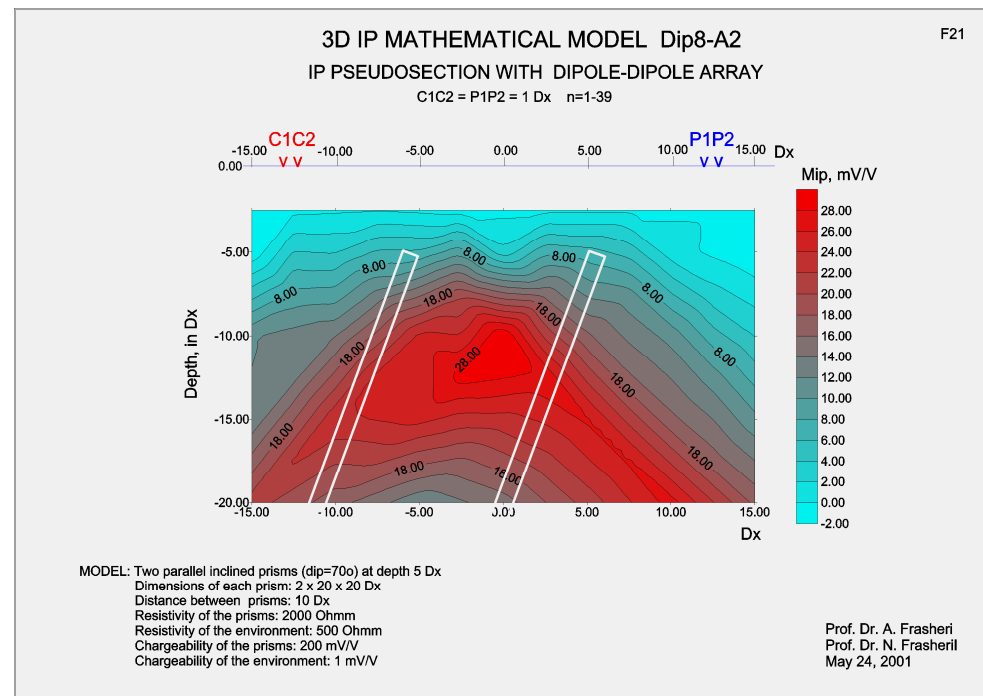


Physical & Mathematical Modeling

- Application of mathematical methods in data processing and interpretation of geophysical information (Gravity, Magnetic, Electric), with the aid of computers, compilation of algorithms and programs for these purpose. (Since 1972) (Lubonja L., Frashëri A., Bushati S., Alikaj P., Beqiraj G., Frashëri N.)

Last studies:

- Dipole – dipole and pole-dipole survey configurations in the framework of the theorem of reciprocity.
- Some considerations on IP data inversion.



VAU DEJES HYDROPOWER DAM (Raw Material)

GEOELECTRIC AND SEISMIC TOMOGRAPHY

PRERJE REALE E REZISTENCES ELEKTRIKE SPECIFIKE TE DUKSHME
DHE E SHPEJTESIVE Vp dhe Vs E VALEVE TE DIFRAGUARA
HIDROCENTRALI I VAUT TE DEJES
DIGA ME MATERIAL VENDI
Tirane, 1998

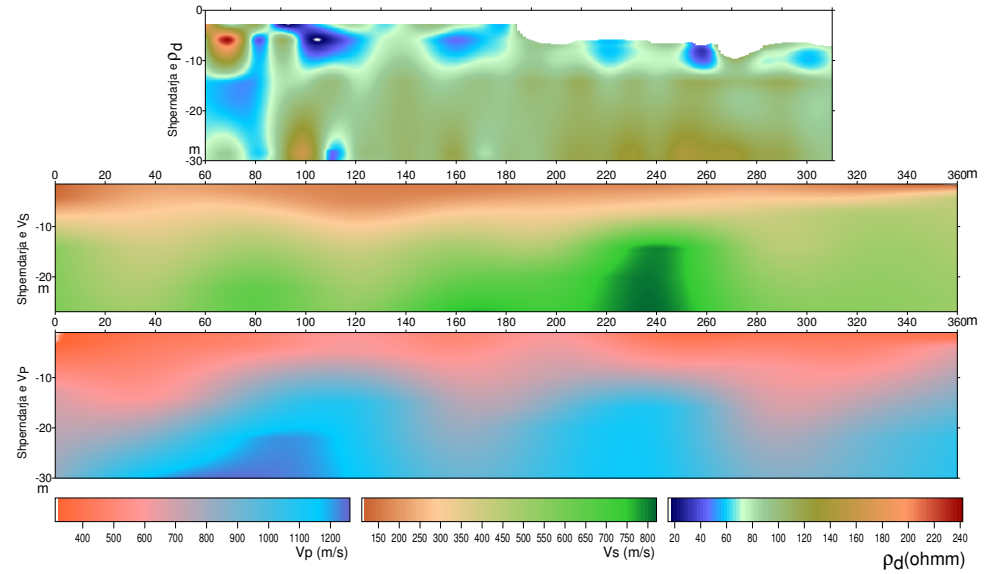
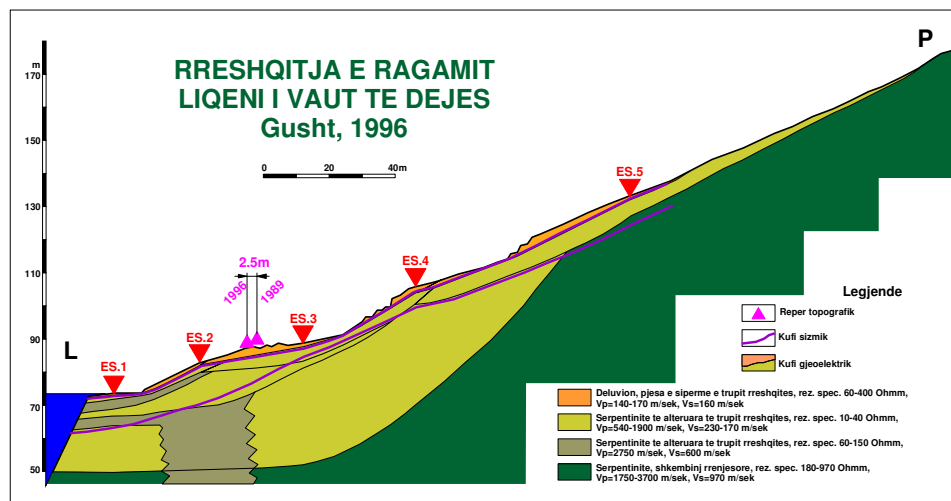
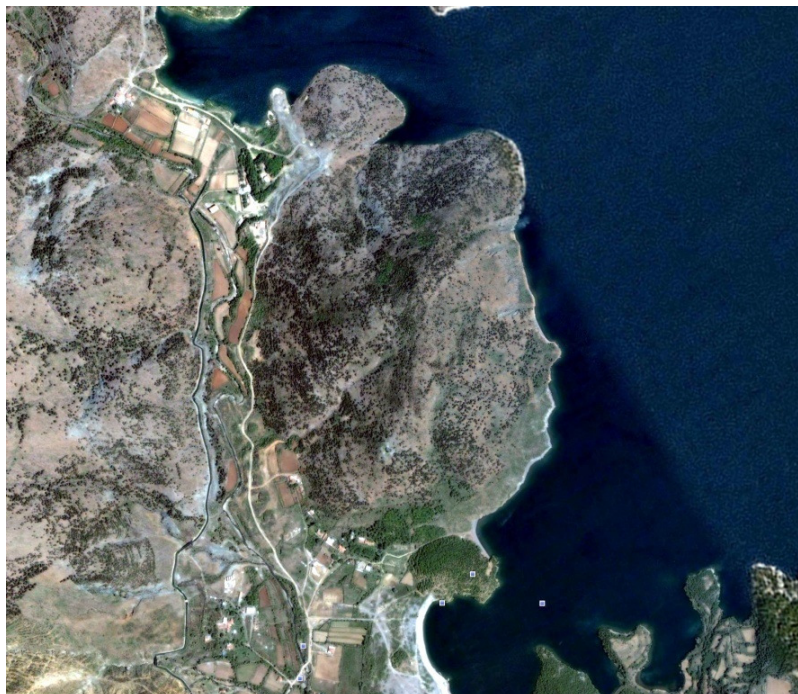


Fig. 12-a

Landslide Investigation

RAGAMI LANDSLIDE: VAU DEJES LAKESHORE

GEOPHYSICAL ENGINEERING PROFILE

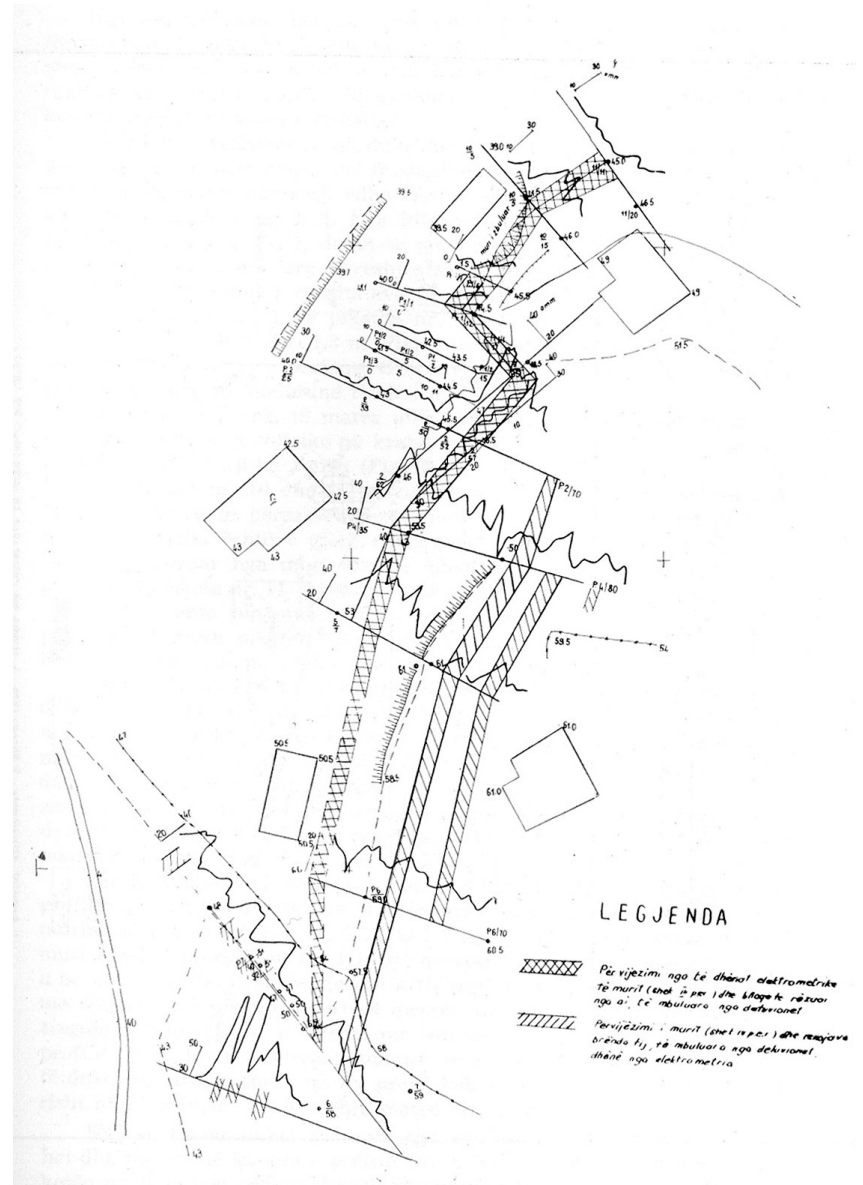


PORAVA LANDSLIDE: FIERZA LAKESHORE
SEISMIC ENGINEERING PROFILE

Archaeological Geophysical Research

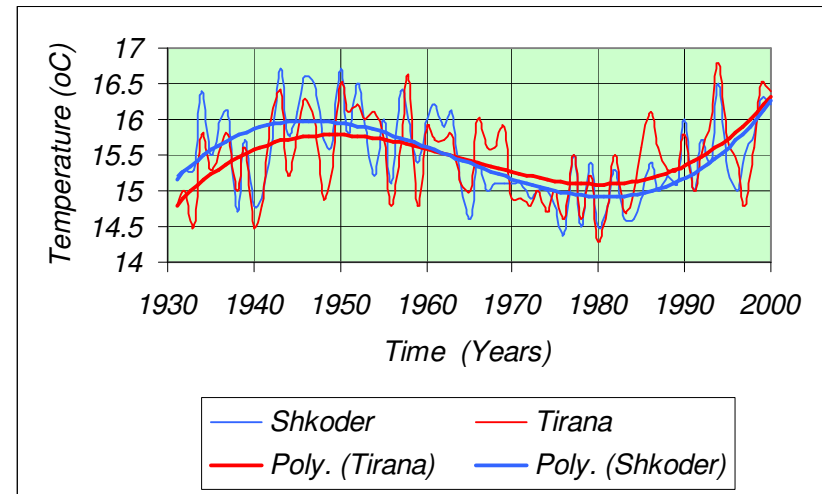
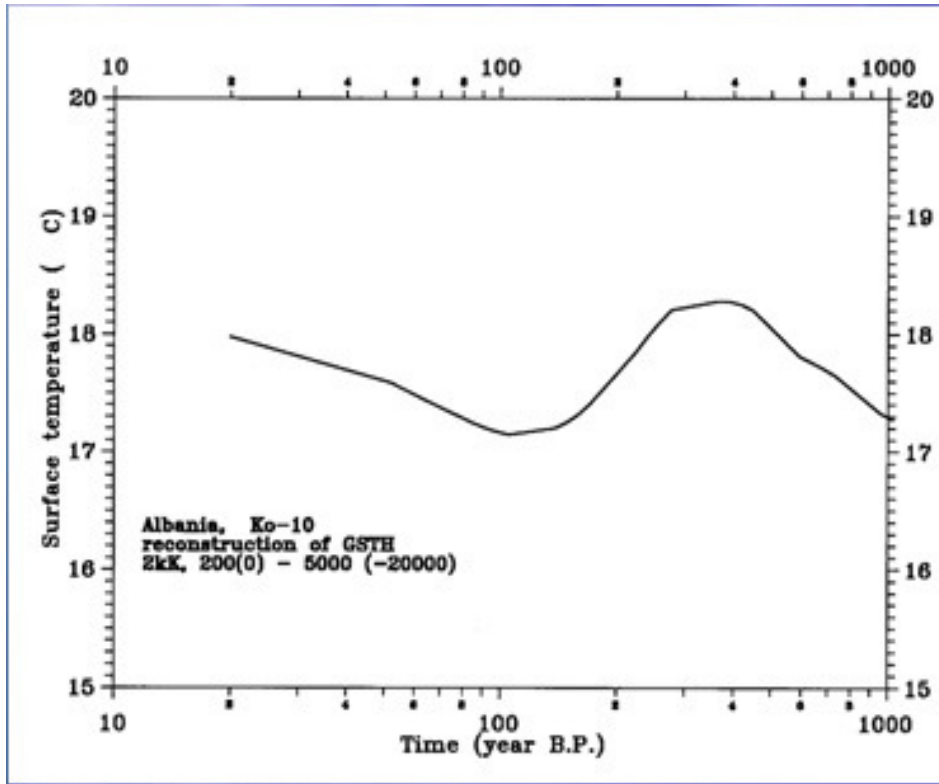
(Frashëri A., Avxhiu R.) (1975-)

MARGLLICI CASTEL, PATOS



Paleoclimate change (2002-until today)

(Frashëri A.)



PUBLISHED MONOGRAPHS

1. Frashëri A., Kodhelaj N., 2010. Geothermal Energy Resources in Albania and a platform for their use". (In Albanian, extended chapter in English), Monograph. Published by Faculty of Geology and Mining, Polytechnic University of Tirana, Typography KLEAN, Tirana.
2. Frashëri A., Londo A., A.Shtjefni, Çela B., Kodhelaj N., Pano N., Alushaj R., Bushati S., Thodhorjani S., 2008. Space Heating and Cooling Geothermal System. (In Albanian), Monograph Published by Faculty of Geology and Mining, Polytechnic University of Tirana, Typography KLEAN, Tirana.
3. A. Frashëri, Beqiraj G., Frashëri N. 2008. A review on application of geophysical methods for exploration of copper and chrome ores in Albania. (In English), Publ. Academy of Sciences, Tirana.
4. A. Frashëri, V. Çermak, Rushan Liço, Nazif Kapedani, Fiqiri Bakalli, Burhan Çanga, Enkeleida Jareci, Edlir Vokopola, Hilmi Halimi, Esat Malasi, Jan Safanda, Milan Kresl, Lenka Kucerova, Peter Stulc, 2004. " Atlas of Geothermal Energy Resources in Albania", (In Albanian, , extended chapter in English), Monograph, Published by Faculty of Geology and Mining, Polytechnic University of Tirana, and Academy of Sciences of Albania.
5. Frashëri A. 2000. Geothermal energy in Europe, State of the Art and necessary actions and measures to accelerate the development.- Albania. IGA & EGEO Questionnaire 2000.
6. A. Frashëri, V. Çermak, Rushan Liço, Nazif Kapedani, Fiqiri Bakalli, Burhan Çanga, Enkeleida Jareci, Edlir Vokopola, Hilmi Halimi, Esat Malasi, Jan Safanda, Milan Kresl, Lenka Kucerova, Peter Stulc, 1995. Geothermal resources in Europe, (Albania). European Commission, Hanover 2002.
- 7. E. Pumo, A. Frashëri, A. Tashko. 1993 "Geophysical and Geochemical Problems for copper and chromites exploration. (In Albanian), Monograph. University Publishing House, Tirana, 1993.

8. Frashëri A. etj. 1992. Geothermal Atlas of Europe, (Albania). (in English), Germany, International Heat Flow Commission, 1992.
 - 9. N. Konomi, A. Frashëri, M. Muco, L. Kapllani, S. Bushati, L. Dhrame 1985. "Karst and geophysical methods for investigation. (In Albania). University Publishing House, Tirana, 1985.
10. A. Frashëri, 1976, 1989. "Physical properties of chrome iron ores and ultrabasic rocks in the Albanides. Published: "Selected studies" Faculty of Geology and Mining, Tirana 1976, and Leobeuer Heffi Zur Geophysik. No. 2. 65-90.

Thank you very much for your attention!