Iran-Austria Joint Scientific Conference in Higher Education

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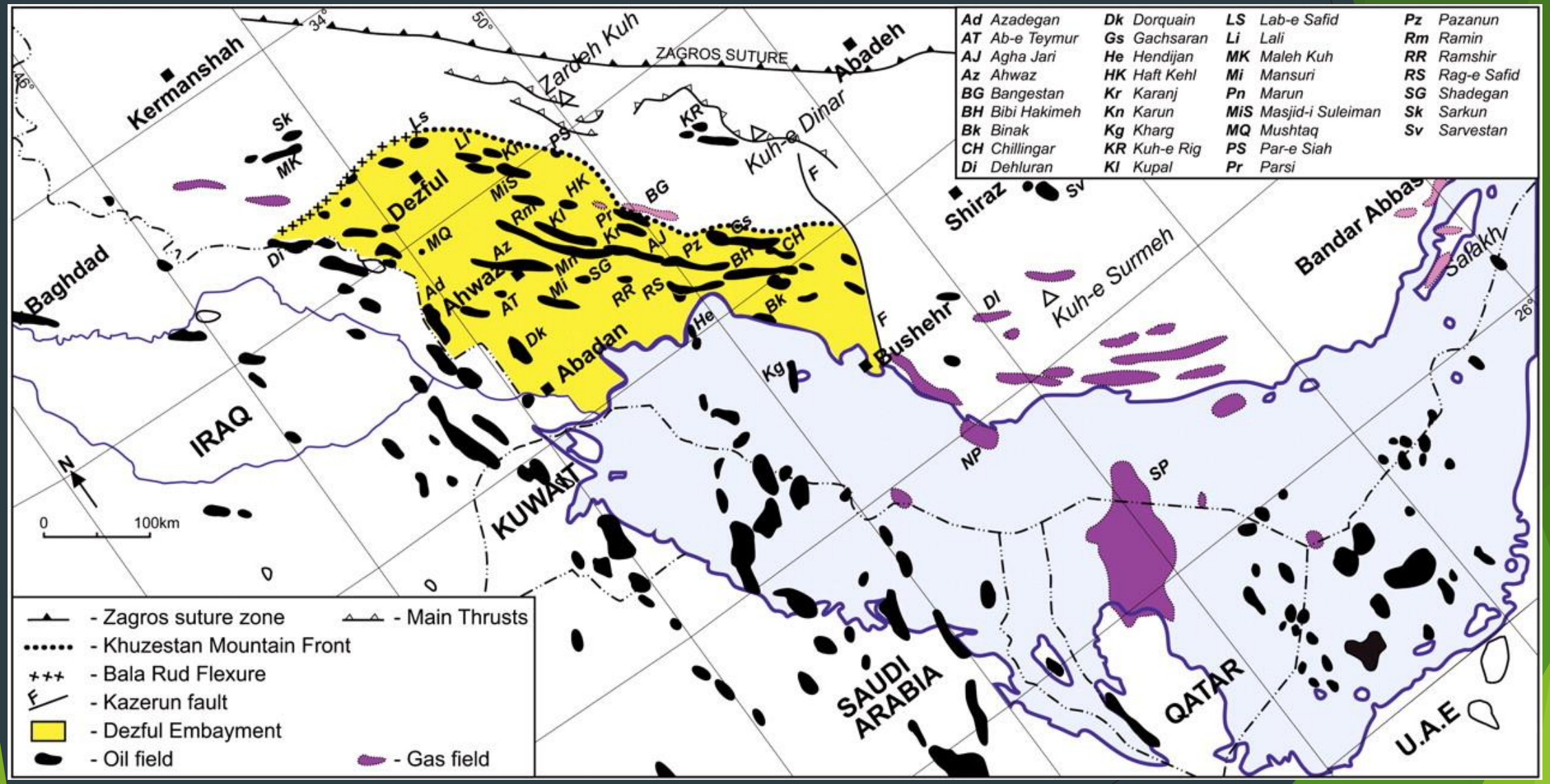
Structure of Talk

- Research Topics:
- Petroleum Geoscience and Engineering
- Mineral Resources
- Basic Geological Sciences

Frame Work of Joint Scientific and Technical Collaboration

- Applied research
- Joint Venture Research cooperation
- Exchange of Students and Professors
- Joint Master and PhD Programs
- Cooperation between Science and Technology Parks

Petroleum Geoscience and Engineering



Major Topics on Petroleum Geoscience and Engineering

1. Manufacturing, equipments and materials
2. Production and Operation
3. Modern technology-driven services in drilling operations
4. Enhanced Oil Recovery (EOR)
5. Modeling, control and management of reservoirs
6. Exploration and geosciences
7. Strategic studies, infrastructure and productivity
8. Optimizing energy consumption
9. Corrosion and protective coating
10. Maintenance and productivity
11. Development of oil and gas processing technology
12. Integrated databases and in-house softwares
13. HSE

Petroleum Geoscience and Engineering-1

- Manufacturing, equipments and materials

- Construction of modern drilling and maintenance of offshore and onshore

- Design and manufacturing of Pre-processing of oil and gas

- Optimizing of water management facilities and waste management

- Design, construction and production of consumable materials in Hitech process

- Production and Operation

- Development of intelligent operations systems in oil and gas fields

- Development of numerical methods in analysis and interpretation of short-term (Well Test) and long-term production of oil and gas wells.

- Development of production history algorithms

- Optimization of Production Optimization in new and under fields

- Development of technical capabilities for exploitation of carbonate reservoirs(Target testing, reservoir characterization, drilling etc)

Petroleum Geoscience and Engineering-2

- Modern technology-driven services in drilling operations

- Training technical staff in Exploratory Drilling Operation, Evaluation, Production and Injection

- Development of drilling method

- Applied models for improving safety of drilling and well service

- Fast and Accurate Advanced Well Logging and core analysis tests - Technologies for wells and smart fields

- Enhanced Oil Recovery (EOR)

- Feasibility study (technical and economical) of EOR Methods in Iran Reservoirs including
1. Gas s or solvent (miscible and immiscible) injection
2. Water flooding methods
3. heating methods

- Assess the performance of gas condensate reservoirs in the discharge pressure and dry gas cycling

-EOR research and technology development for heavy oil reservoirs

Petroleum Geoscience and Engineering-3

- Modeling, control and management of reservoirs
- - Integrated management of wells
- - Static and dynamic modeling, fluid simulation, data interpretation

- Development of new geostatistics algorithms for interpretation and analysis of reservoirs data
- New model of integrated management of reservoirs
- Technology development for abnormal pressure reservoirs

- Exploration and geosciences

- Reduce the risk of exploration and operations, offshore and onshore
- Improving the quality of seismic data
- Prediction of consolidated rock and fluid properties
- Techno-economical assessment exploration activities
- Prediction of rock and fluid volumein reservoir using limited indirect and direct data
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- Software development and promotion in analyses and interpretation of geological, petrophysical and geophysical data

Petroleum Geoscience and Engineering-4

- Strategic studies, infrastructure and productivity

- Codification of specific standards for Iran oil fields development
-Integrated legal and management format for contractors
- Providing innovative financing models for the development of fields
- Creation of EOR consortium
- Implementation of appropriate management systems and methods for promoting creativity and innovation
- Projects planning and management
- Develop an effective system of evaluation and promotion for human resources

- Optimizing energy consumption

- Optimal utilization of available energy and energy auditing
- Long term energy strategy plan
- Integrated culture, education and information program for optimize energy consumption
- Development of heat recovery technologies in large-scale plants
- Optimizing fuel consumption

Petroleum Geoscience and Engineering-5

- Corrosion and protective coating

- Corrosion analysis and prevention
- Developing appropriate coatings to prevent corrosion

- Maintenance and productivity

- Development modern strategy for equipment maintenance
- Upgrade and improve equipment performance
- New methods of energy optimization in production and processing equipment and facilities
- Design, construction and production of consumable materials in Hi-tech processing
- Improving production productivity

- Development of oil and gas processing technology

- Modern production, desalting and NGL technologies
- Optimizing water management facilities
- Waste processing technology

Petroleum Geoscience and Engineering-6

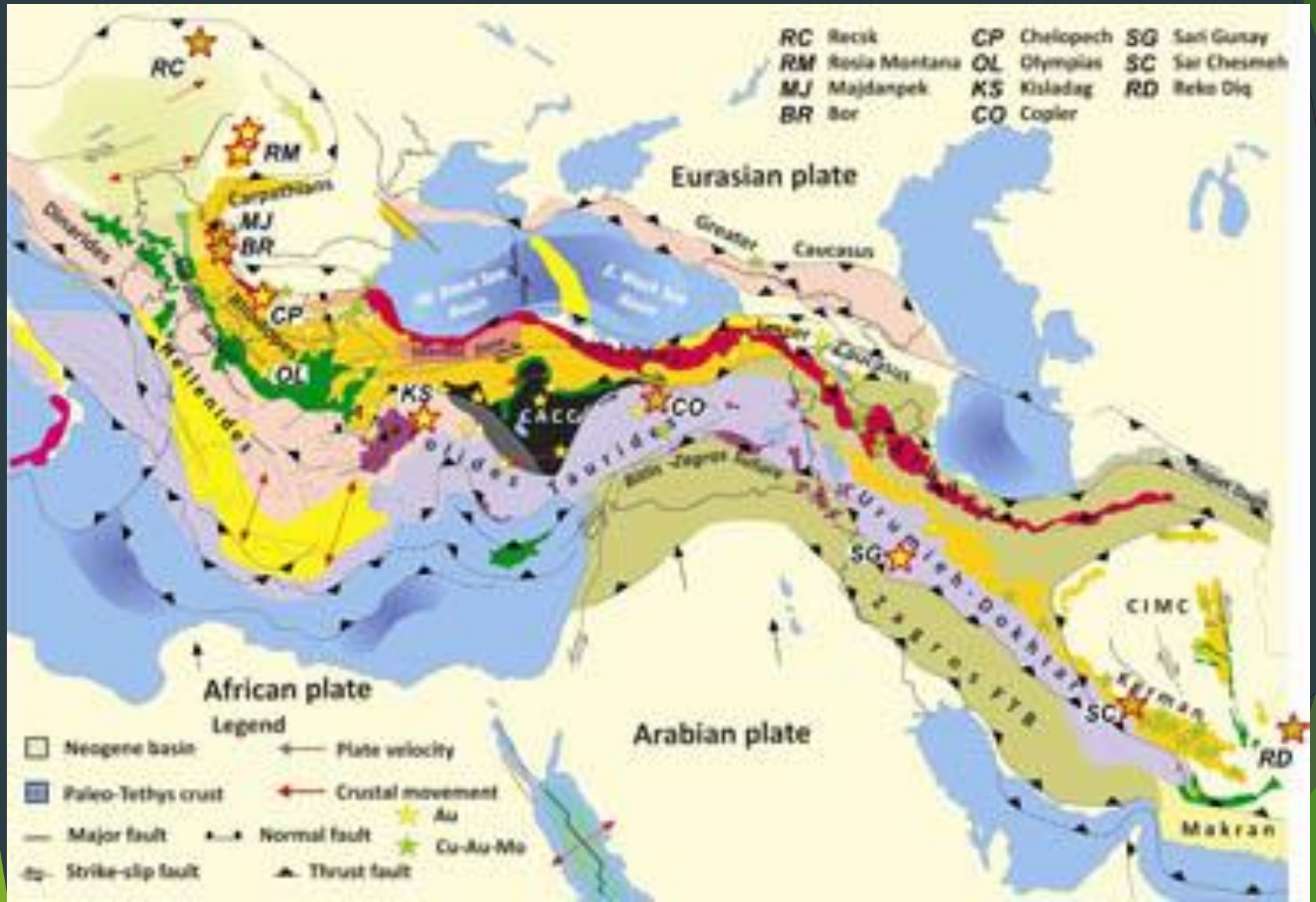
- Integrated databases and in-house softwares

- Production and development of specialized software for petroleum industry
- Customizing softwares based on the characteristics, conditions and specific technical specifications
- Developing algorithms and software for assessment and risk management of oil fields development
- Development of simulation software fractured reservoirs
- Economic evaluation and risk analysis software for reservoir evaluation
- Development of simulation software for EOR

- HSE

- Developing regulations, guidelines and standards of HSE
- Promote quality standards in petroleum industry
- Environmental evaluation for drilling operations
- Developing modern safety systems for petroleum industry
- Remediation of oil polluted area

Mineral Resources



Mineral Resources-1

- Exploration

- Geology

(Quantitative metallogenic mapping, district and mine based mapping (2D and 3D), basin analyses, magmatism, metamorphism and structural geology in mineral exploration, digital 2D and 3D mapping)

- Geochemistry

(New models for geochemical dispersion from deeply, buried mineralization, anomaly enhancements by suitable combinations of sampling processing and analytical methods, separation of background and anomaly using mathematical models)

- Geophysics

(Air borne geophysics, Time Domain techniques, 3D modelling, Bore hole exploration)

- Geomatics

(Modern technologies i.e. GyroLag, LIDAR)

- Drilling

(Robust instrument with minimum maintenance, Versatile drilling rig for shallow and deep drilling, On-line geochemical analyses)

- Analyses

(On-Line analysers, quick and reliable analyses)

Mineral Resources-2

Mineral Processing

- Beneficiation technologies focusing on dry and low water consumption processes
- Beneficiation technologies for low grade ores, tailings and fines
- Energy optimization and water recycling in mining and related industries
- Using clean and renewable energies in mines and mining industries

Waste and tailing managements

- Recycling technologies, reuse of solid wastes and gases in mining plants
- Precious metals recycling from electronic wastes and mining dumps
- Environmental management of wastes and greenhouse or toxic gases emitted from mining plants

Mineral Resources-3

- Hi-tech and modern technologies

- Implementation of modern technology in mining operations: drilling, blasting, loading, haulage, hoisting and so on

- Developing mobile mineral processing and beneficiation plants for small scale mining

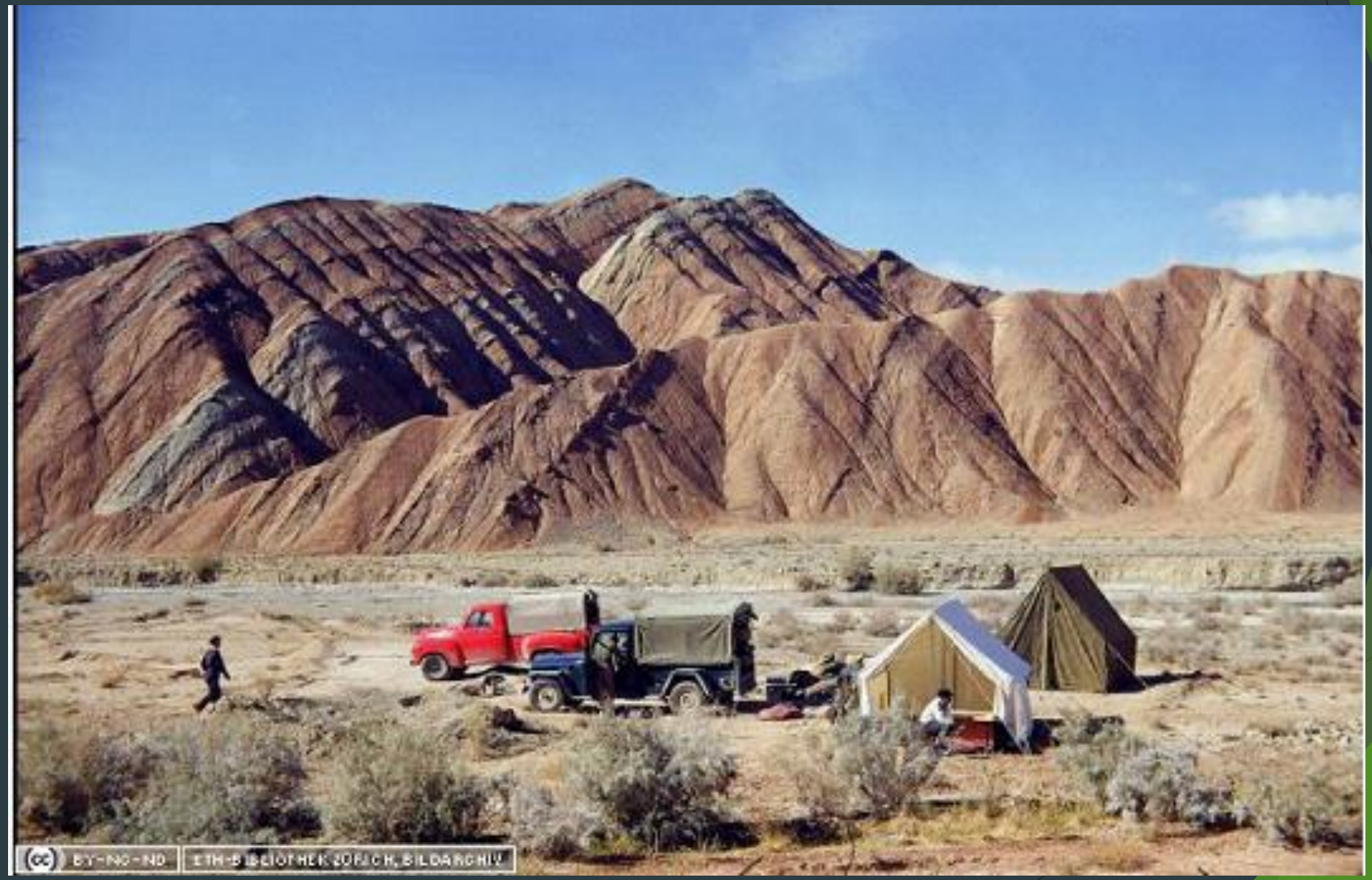
- Extraction elements and minerals from sea water and brines

- Employing information and communication technology (ICT) in mining and related industries

- Automation and remote control technologies for mining operations

- Improving health, safety and environment (HSE) issues in mines, mining industries and local communities
- Employing information and communication technology (ICT) in mining and related industries

Basic Geosciences



Basic Geological Sciences

- Isotope Geochemistry
- Mineral Deposits (Non-Sulphide Pb-Zn, i.e. Mehdi Abad and Anguran, Cu porphyry, Carlin and Orogenic Golds, Alpine chromites, Iron Ore, etc)
- Ophiolites
- Dormant Volcanoes
- Salt Domes
- Continental-Continental Collisions
- Mud Volcanoes
- Fragmented Continental Crust
- Crustal evolution
- Hydrogeology and Hydrology
- Geohazards
- Neo- and Morpho-Tectonics

THANK YOU FOR YOUR ATTENTION