

## **Helium, Nitrogen, Argon Isotopes ( $^{36}\text{Ar}$ , $^{38}\text{Ar}$ , $^{40}\text{Ar}$ ) Gases of Mud Volcanoes of South Caspian Depression and their Geochemical Value for identification of Gasogenic of Deep Deposits**

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Inert components and isotopes of argon ( $^{36}\text{Ar}$ ,  $^{38}\text{Ar}$ ,  $^{40}\text{Ar}$ ) are studied in the gases of oil and gas fields (middle Pliocene) and mud volcanoes (natural research wells of deep deposits).

Interpretation methods for experimentation data and their relations especially for the gases of young deposits and mud volcanoes are developed. As a result of the comparative interpretation of experimentation data on argon isotopes, inert components of gases of exploring fields and mud volcanoes, it is identified that:

1. Gases of mud volcanoes are 5-6 times older than middle Pliocene deposits.
2. Hypothesis on energy sources of eruption of mud volcanoes are not trustworthy and a new hypothesis is being offered.
3. The gases of the top mantle are not involved in the formation of gases of mud volcanoes.
4. Among 100 studied mud volcanoes, ones' with the roots most connected with the has deposits, are selected.