

آنا کاترینا لخمین



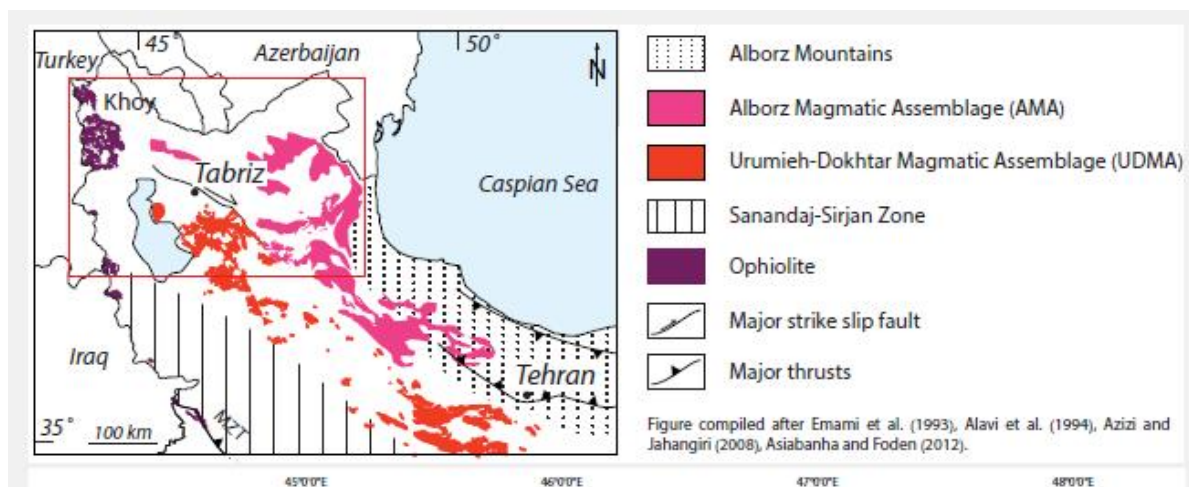
دانشجوی دکتری زمین‌شناسی دانشگاه ETH سوئیس می‌باشد که در چارچوب پروژه ژئودینامیک آذربایجان از سال 1393 تا کنون در شمال غرب ایران در رابطه با سنگ‌های آذرین کرتاسه تا حال و همچنین مجموعه افیولیت‌ها و توربیدایت‌های مربوط به حوضه نئوتتیس تحقیق می‌کند. وی در سمیناری تخصصی در مرکز تبریز به بیان آخرین نتایج یافته‌های خود با موضوع تکامل فلات ترکی- ایرانی "آتشفشانی میوسن پسین تا کواترنری در آذربایجان (شمال باختری کشور)" پرداخت.

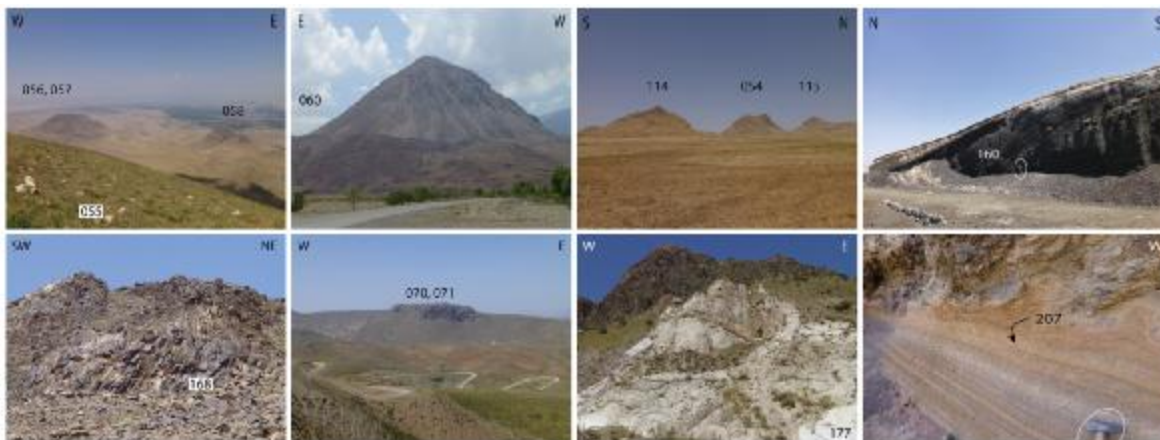
Miocene to Quaternary volcanism in NW Iran Azerbaijan: new geochemical and geochronological data

Anna Lechmann, Jean-Pierre Burg and Mohammad Faridi

Geological overview

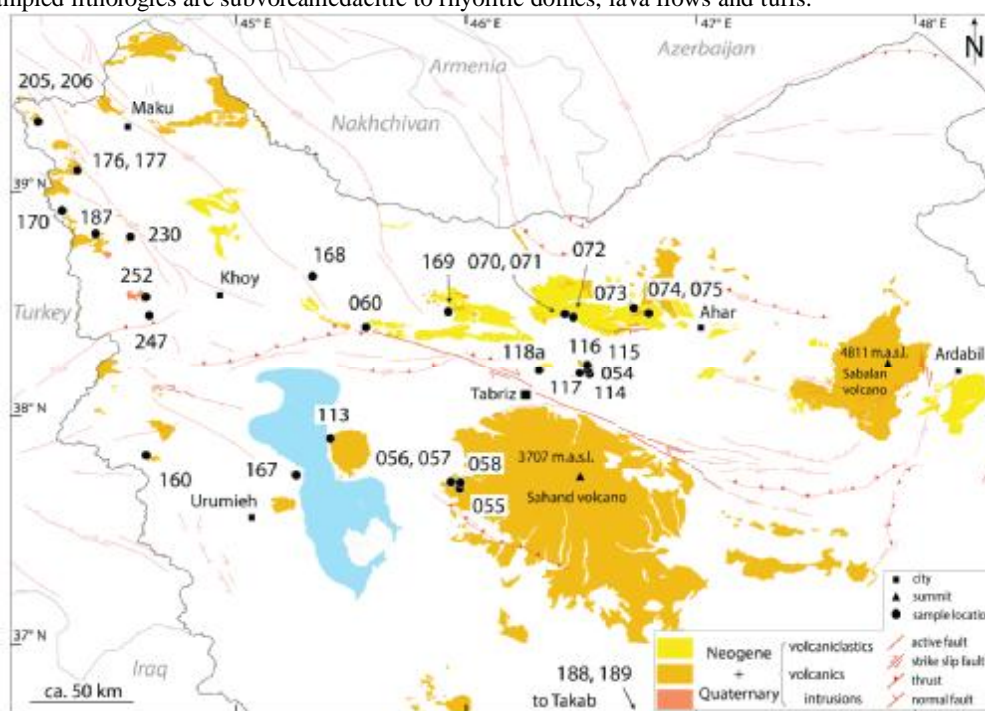
The Mesozoic to Present geology of Iran has been shaped by the northward subduction of the Neo-Tethys Ocean during convergence and subsequent collision between Arabia and Eurasia, leading to the generation of magmatic arcs and seeding the conditions for the formation of the Turkish-Iranian Plateau. Over this Plateau, Miocene to Quaternary volcanic rocks cover vast areas. The field area is located in the Azerbaijan province of NW Iran and includes three major tectonic units, from W to E, the Khoyophiolite, the Urumieh-Dokhtar magmatic arc (UDMA) and the Alborz magmatic arc (AMA). Herein, we do not differ between the two magmatic assemblages.





GeshlaghN of TabrizChaldranArab Dizaj

The sampled lithologies are subvolcanicdacitic to rhyolitic domes, lava flows and tuffs.

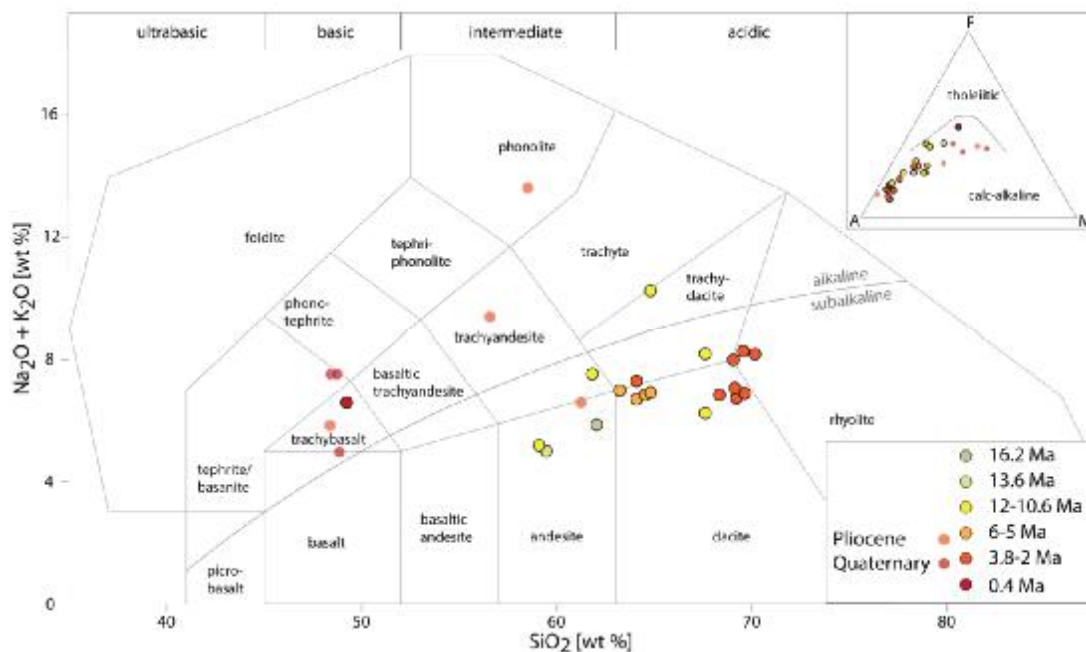


Distribution of the sampled volcanics, from Ahar to the E to the Turkish-Iranian border to the W. 33 samples were inspected. On 27 rock powder samples bulk-rock chemistry was performed, including 13 subvolcanic domes and 14 lava flows.

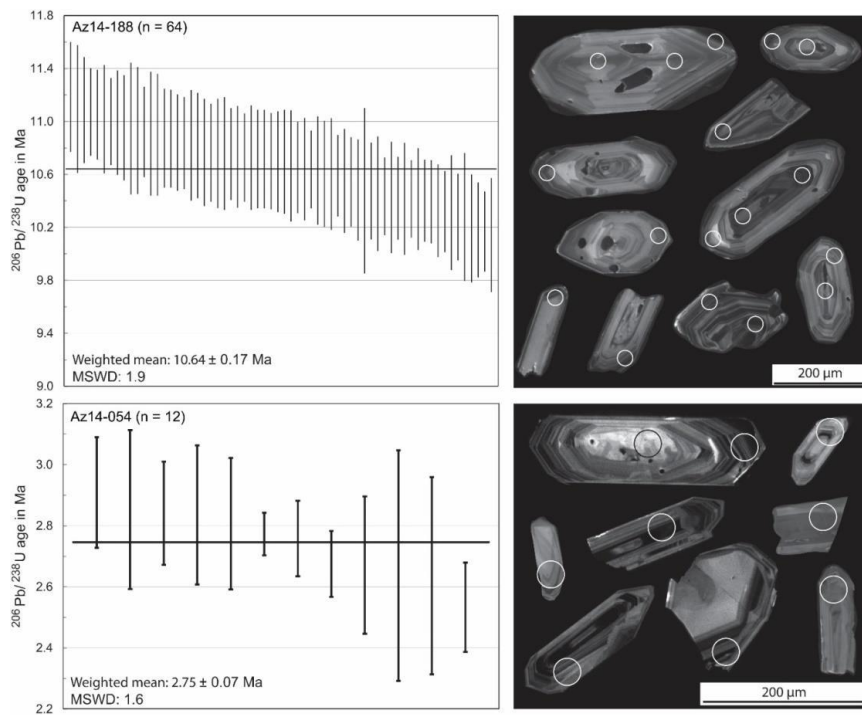
Summary and outlook

NW Iran exposes many small volcanic centres. The volcanic units cover a broad compositional range, but all show a subduction component is the most striking one. U-Pb ages show two distinct age clusters, one Miocene (10-16 Ma) and a separate latest Miocene - late Pleistocene age (0.4-5.5 Ma). Major and trace element chemistry shows signs of a mantle metasomatized by subduction-derived fluids. Sr-Nd and Pb isotopic compositions will help to characterize the mantle source of these lavas and to constrain the extent of crustal contamination. Mineral chemistry on selected samples will help to further delineate the character of the young volcanic lavas in NW Iran. The comparison with coeval

lavas from neighbouring regions will shed light on the formation of this widespread magmatism and its associated geodynamic processes.



The AFM diagram (Fig. Up) shows that the samples are calc-alkaline. In the TAS diagram (Fig. Down) the samples plot in trachybasaltic to trachydacitic fields with alkaline.



U-Pb zircon ages of 22 samples yield two distinct age distributions (1) middle Miocene (~ 10-16 Ma) and (2) latest Miocene – late Pleistocene (~ 0.4-5.5 Ma).