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Study of pressure and temperature of metamorphism, phase stability and garnet and biotite chemical zoning in the Jandaq metamorphic rocks using pseudosection method

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Abstract: Temperature and pressure of pelitic metamorphic rocks (metapelites), from the Jandaq area in NE Isfahan, are studied using pseudosection approach. The data used in this research are from already published data by other researchers; however the applied method is reported for the first time. The metamorphism temperature is estimated to be about 400 to 670°C and pressure to be 2-6 kbar in the published study. Our study confirming these results, indicates the pressure and temperature more precisely. Also garnet and biotite chemical zoning is studied. Since garnet and biotite are the main ferromagnesian minerals in these rocks, the chemical zoning are determined for these two minerals, based on Fe and Mg content, and the P-T is estimated using Fe and Mg mole fraction in the minerals. Using the whole rock chemistry, the stability of the mineral phases is modeled considering metamorphic grade increase.

Keywords: *metamorphism, pelites, pseudosection, phase stability modeling*.

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