The characteristics and the age of the diabase in Wuding area，in Southwestern margin of Yangtze Block

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Wuding area is situated at the northernmost of wuding-yimen platform convex metallogenic belt of the mid segment of xikang-yunnan axis in southwestern Yangtze Block. The distribution of magmatic rocks in the study area is extensive, mainly basic intrusive rocks, a few basic volcanic rocks, Acid rock. The basic shallow intrusive rocks are found throughout the region, there are 49 sizes of rock mass, magmatic rock exposed area are 43km^2. The rock type is Ti (diabase porphyrite) rocks, gabbro diabase、basic intrusive rocks are quartz albitite porphyry、variable-tuff、variable-tuff dolomite、albitite etc.

Based on research of the typical diabase of every stage, we summarize the following characteristics:

1:Pre-jinning-stage: metamorphic alkali-diabase determination of biotite age by K-Ar method is 1059± 38Ma, Isotopic age of the alkali basaltic volcanic rocks is 1805± 60Ma，The chemical composition of the rocks is character-ized by poor silicon, enrich aluminum, high iron potassium and low titanium magnesium.

2:Jinning-stage：Isotopic age of alkali diabase hornblende is 651± 27Ma，The SiO_2 content of the intrusive rocks in this period is generally higher than the previous period, with an average of 45.87%, K_2O+Na_2O lower than the previous period, with an average of 4.11%, general Na_2O>K_2O.

3:Chengjiang-stage: Isotopic dating of intrusive and extrusive rocks is 591± 10Ma, High alkalinity(δ =16), Iron rich(Fe_2O_3+FeO>20%),and Fe_2O_3>FeO.

4:Later Hercynian-stage: Rb-Sr isotopic age value of intrusive diabase is 250± 11Ma, High alkali characteristics, rich in sodium, and enrichment of incompatible elements and volatile components.

5:Yanshan-stage: Determination of isotopic age of gabbro diabase diabase 181± 6Ma, From the early stage to the late stage, the content of TiO_2 was gradually decreased and the content of na decreased gradually.