

How does an age value of the radiometric age correlate with a geologic event?

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A radiometric age is obtained by using the variation of radioisotope and/or isotope ratios including a radiogenic isotope and the effect for crystals due to radioactive decay with time based on the assumption that radioactive decay occurs independently on the physical and chemical conditions of environments. The age value is required to satisfy such conditions as a closed system concerning related isotopes and the effect of crystals caused by the radioactive decay is not damaged by age value the secondary effects. Such conditions are different among each radiometric method. In each radiometric method, there are much endeavors to increase the reliability of obtained values.

On the other hand, the obtained value is commonly treated as representing an age of geologic event without detailed consideration. However, in recent years, analytical precision of instruments has much improved and quite a low analytical error is assigned. Hence it is necessary to consider carefully how an age value correlates with a geologic event. In my talk, I will discuss this issue by showing several cases and demonstrate the importance to consider the conditions of each case carefully. I will also make a caution about the treatment of "closure temperature".

Keywords: radiometric age, geologic event, dating method, closure temperature