The cross-check of radiocarbon dating

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http://www.eri.u-tokyo.ac.jp/KANEOKA-LAB/title.html

There are two types to measure 14C density. One of them is the use of a counter to measure the beta ray which is emitted when 14C decays. Another one is the AMS method.

Beta ray counting method

This method is subdivided into the method of using a liquid scintillation counter and that of using a gas counter. The bata ray counting method needs a sample with relatively large amounts (about 2g of carbon) and takes long time (more than several hours) for measurement. However, when sufficient amount of sample materials are available, this method has a significant merit that the result is hardly influenced by the occurrence of small heterogeneities in sample materials.

AMS method

Since the AMS method directly counts the number of 14C ,this method needs much less amounts of sample materials compared to the counting method(1mg), and the required time for measurement is short (30minutes/1sample). However, this method is easily influenced even by the small heterogeneities of a sample.

We did cross-checks on radiocarbon ages of wood samples that were taken from the taphra layer.