

Beam Time request for the 1 MV tandem accelerator.

Title of RESEARCH:

AMS Dating of the Danube fluvial terraces in the Romanian Plain

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Short description: Measurements will determine the Age of Quaternary Formations in the Romanian South-West Plain. The investigated area covers the south-west area of Romania territory . The region corresponds to the Western part of Lower Danube Valley unit, namely the Danube terraces and the floodplain, largely extended over Serbia, Bulgaria and Romania territories. Ancient hypothesis assumes that the Danube Valley and the Iron Gate gorges existed already in the Upper Miocene as a heritage of a narrow Middle Miocene valley. Subsequently, in the Middle Pleistocene-Holocene (roughly the last 780 000 years), the Danube River deepened in the pre-Quaternary pile of the central Romanian Plain. As a result, the higher relief of the Romanian Plain underwent repeated down-cuttings of the five up to eight stepped terraces and the floodplain.

The Challenge of our experiment is to measure of the age and the number of terraces in the south-western Romanian Plain.

The number of terraces is highly debatable because, after deposition, the Danube terrace alluvia were overlain by 30 m-thick wind-borne Aeolian clayey silts and sands from the floodplain of the Danube and of the rivers Jiu and Olt . No published data are available jet about the age of the mentioned alluvium of terraces. Experiments will be performed by use of AMS with ^{10}Be and ^{26}Al and ICPMS analyses of ^9Be and ^{27}Al .

Requested beam time:

3 x 7 days , first period end November , second period in December and last in May , next year.