

Seminář ÚJF AV ČR

P. I. Zarubin

JINR, Dubna, Russia

News report on application of nuclear track emulsion

In spite of the fact that nuclear track emulsion (NTE) was developed half a century ago, it still remains a universal and cost-efficient detector. NTE of BR-2 type with an unsurpassed spatial resolution of about 0.5 μm provides track observation beginning from fission fragments up to relativistic particles. The NTE technique deserves further application in fundamental and applied research at modern accelerators and reactors, as well as with radioactivity sources, including natural ones.

Preparation for a study of the ternary fission excited by thermal neutrons in samples impregnated with a uranium compound is presented.

Study of triplets of alpha particles in the Hoyle's state arising in dissociation of relativistic ^{12}C nuclei in a nuclear track emulsion is presented.

The analysis of layers transversely irradiated by muons with an energy of 160 GeV at CERN and about 2.5 GeV in the "muon torch" of the U-70 IHEP accelerator is in progress.

Study of multiple fragmentation of medium and heavy nuclei (including radioactive ones) which become available with the development of the NICA collider is suggested. The goal is yields of the relativistic isotopes $^{1,2,3}\text{H}$ and $^{3,4}\text{He}$ as the reference for the equation of state of nuclear cluster matter.

Seminář proběhne v anglickém jazyce v pátek 7. prosince 2018 v 10:30 v zasedací místnosti ÚJF AV ČR.