

# PLPAC meeting 2024-1

Contribution ID : 14

## Measurements of pre-scission $\alpha$ -particle multiplicity spectra in $^{11}\text{B} +$ $^{209}\text{Bi}$ reaction

Monday 22 Apr 2024 at 10:35 (00h15')

**PI info :**

Nidhi Sirswal

**local collaborator info :**

Y.K.Gupta

**Collaborators Name :**

Y. K. Gupta

G. K. Prajapati

Pawan Singh

B. N. Joshi

K. Ramachandran

D. C. Biswas

R. K. Choudhury

**Motivation :**

Recent studies highlight a transition in pre-scission  $\alpha$ -particle multiplicity from high to very low values at the Businaro Gallone point during heavy-ion induced fission of  $^{232}\text{Th}$ . This behavior, observed across various induced fission reactions, indicates significant dynamical effects in entrance channels suggesting a reversal in mass flow direction, leading to di-nuclear configurations and premature fission. The motivation for proposed measurements in  $^{11}\text{B} + ^{209}\text{Bi}$  fission lies in extending investigations on entrance channel effects observed in heavy-ion induced fission of  $^{232}\text{Th}$  to lower mass regions.

**Beam time requirement in shifts :**

18

**Beam :**

$^{11}\text{B}$

**Beam Energy :**

66MeV

**Beam Current :**

10-30

**Beam Port :**

30degree GPSC Hall-1

**Buncher Required :**

No

**Target / Sample Details :**

209Bi

**Whether the experiment is part of PhD work ? :**

No

**Whether the experiment is part of Post-Doc work ? :**

No

**information on the past beamtime at PLF :**

Understanding non-equilibrium fission from pre-scission charged particle emission

**Publication information related to prior work at the PLF :**

This experiment was carried out in February 2024 and data analysis is being carried out.

**Primary authors :** Ms. SIRSWAL, Nidhi (Bhabha Atomic Research Centre ,Mumbai)

**Co-authors :** Dr. GUPTA, Y.K. (Bhabha Atomic Research Centre) ; Mr. PRAJAPATI, G.K. (BARC)  
; Dr. JOSHI, B.N. Joshi (BARC Mumbai) ; Mr. SINGH, Pawan (BARC Mumbai)

**Presenter :** Ms. SIRSWAL, Nidhi (Bhabha Atomic Research Centre ,Mumbai)

**Session classification :** --not yet classified--

**Track classification :** --not yet classified--

**Type :** --not specified--