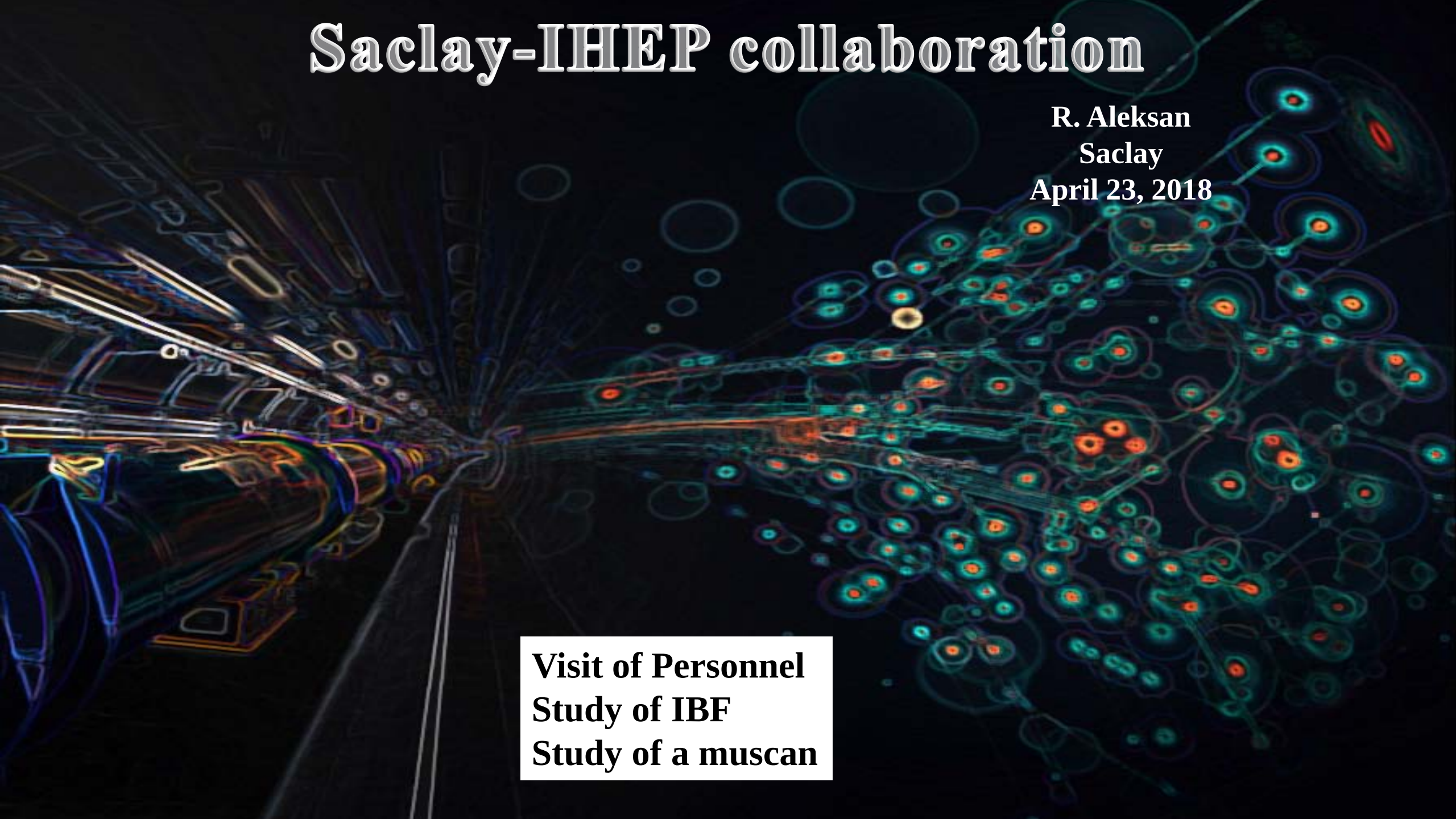
Saclay-IHEP collaboration

R. Aleksan
Saclay
April 23, 2018



Visit of Personnel
Study of IBF
Study of a muscan

Visits of personnel

After short visits in both sides, **first experience of long term visit with Wang Haiyun**

- November 2017 to April 2018 (~6 months)
- Very useful for both sides
  - She learned a lot and gained experience in her education, which she can bring back to IHEP
  - She helped us a lot in data analysis and track reconstruction

Proposal for further IHEP personnel involvment with Saclay

- Could Haiyun continue to work on our data in IHEP (Saclay can provide prototype TPC data)?
- Could IHEP send other PhD students for 6-month internship in Saclay (end 2018)?
- Could IHEP also send chinese postdocs with experience on TPC for longer period (1 year or more)?

Proposal for work to be done by students/postdocs:

- Work on our test stands for IBF studies
- Track reconstruction, analysis of data and resolution studies as function of IBF
- MC simulation of experimental setup with GEANT

Visit of personnel (cont'd)

Continuation of short visits of senior scientists

- From IHEP to Saclay (e.g. visit of Qi Huirong and Zhang Jian from 16 to 23 May 2018)
- From Saclay to IHEP

These visits are very useful to discuss and agree on common R&D projects
Eventually to establish a « collaboration MoU » if necessary

Tentative proposal for next visit:

- Stephan Aune and R. Aleksan would go to IHEP on September, October or November 2018

Proposal:
Set up also regular vidyo meetings (every month or 2 months) to follow up activities

Study of IBF

In Saclay, we are investigating IBF with 2 methods

- With the large Prototype TPC (UV light and cosmic tracks): **effect of IBF on tracking**
- Dedicated IBF small test stand: **research on how to reduce IBF**

In both cases, we will investigate different mesh with high LPI (>800)

- We are studying new mesh fabrication technique

Proposal

- Could IHEP investigate manufacturer in China and send us such mesh?
- In exchange we can provide a few small micromegas samples (100x100mm^2) with these mesh

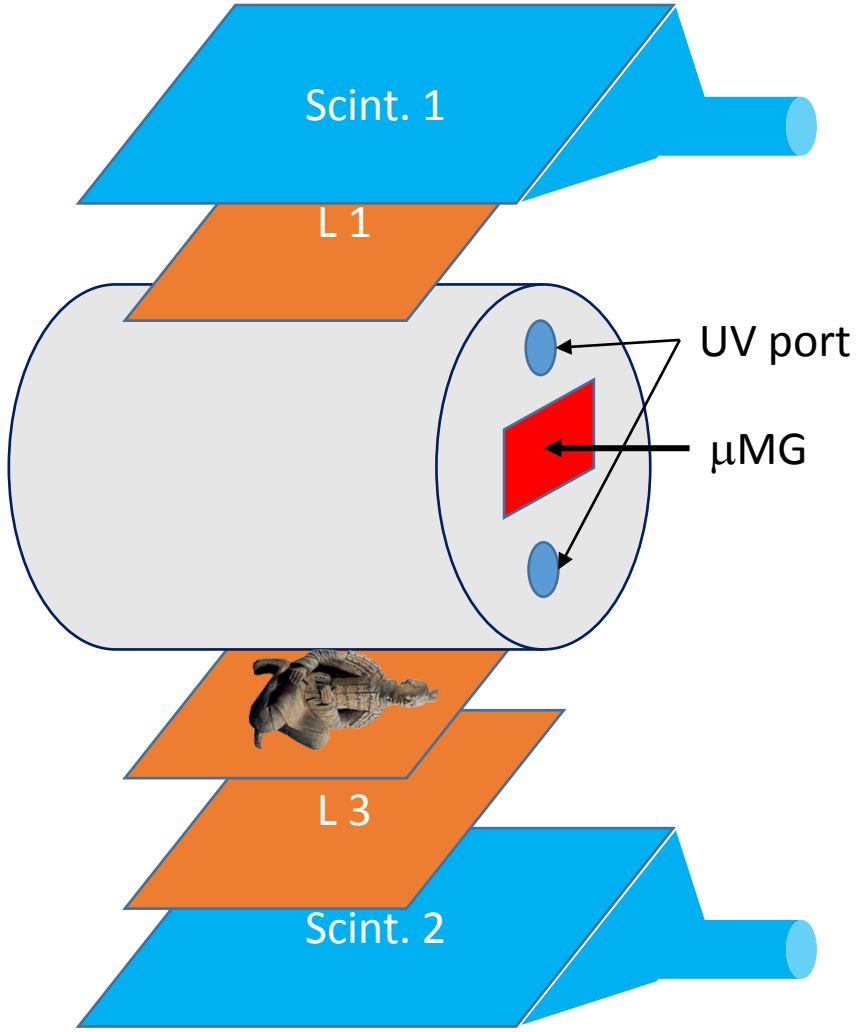
Saclay could also bulk large PCB for IHEP TPC prototype

Proposal

- Saclay will make one large (200x200 mm^2) bulk micromegas for the IHEP with IHEP PCB and send it to IHEP

Dedicated TPC for muonic scan and R&D*

⇨ **3 D Reconstruction tests on-going with present Saclay setup**

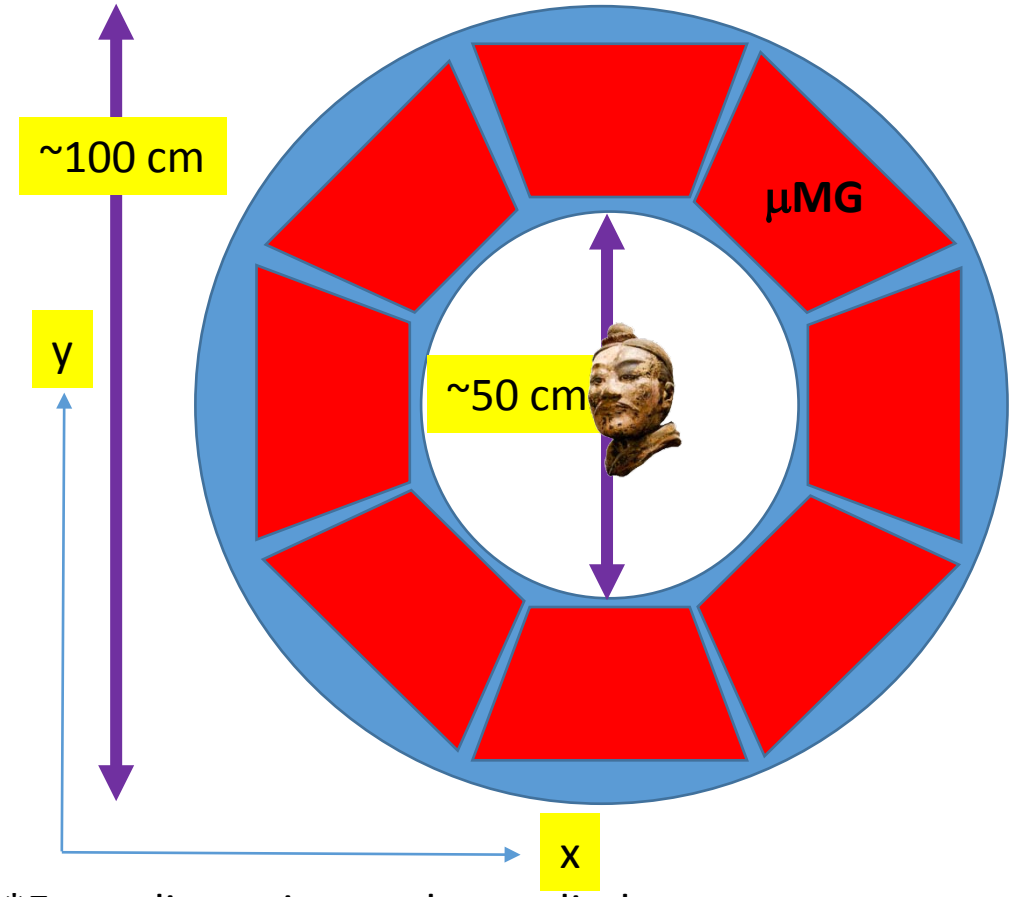


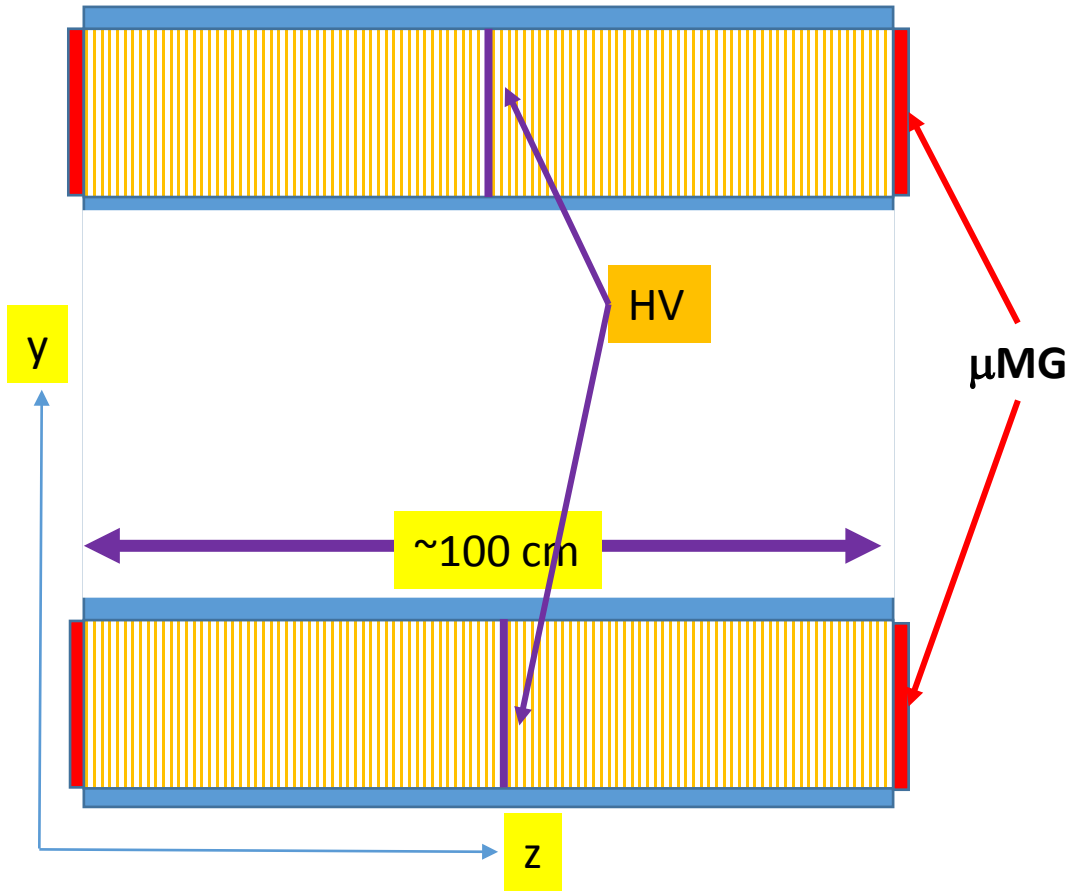
If tests successful,

⇨ **develop a dedicated TPC**

Study of dedicated TPC for muonic scan and R&D

If tests successful ⇨ Design a full optimized TPC both for muscan and R&D*





*Exact dimensions to be studied

Proposal for first step toward TPC-muscan

- Develop a full GEANT simulation of the TPC muonic scan to estimate muscan potential