

BIB studies (VI)

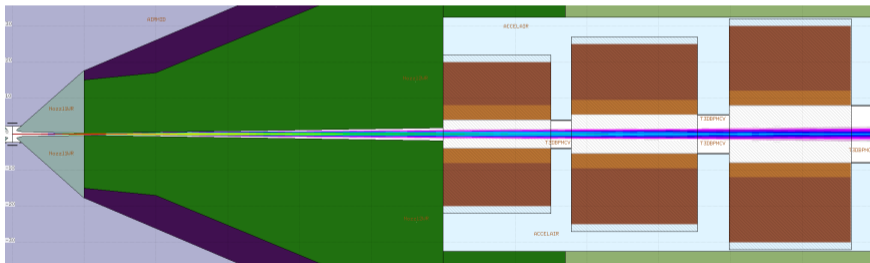
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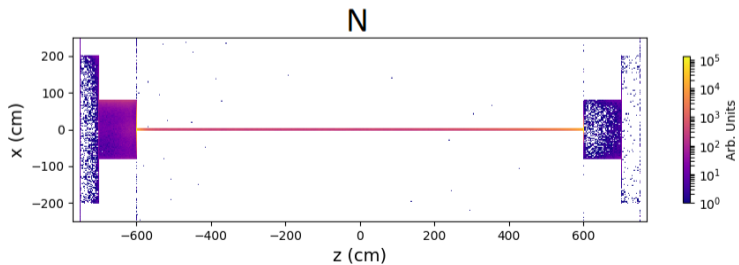
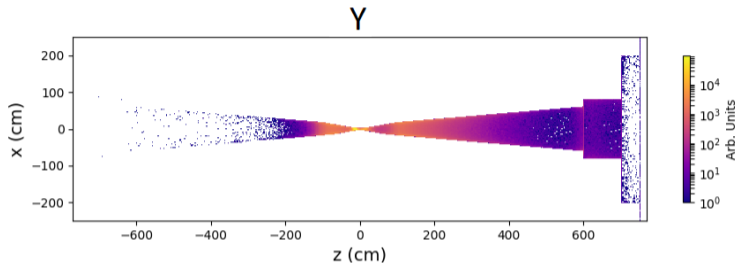
INTRODUCTION

- BIB obtained by μ^- beam of 2×10^{12} particles @1.5 TeV CM energy
- Simulations by Linebuilder + FLUKA
- Energy threshold cuts as stated in "Detector background at muon colliders" Mokhov et al. (2011):
 γ & e^+/e^- 200 keV, neutron 100 keV, proton & μ^+/μ^- 1 MeV
- Muon decays within 100 m from IP
- Realistic beam with sigma and emittance

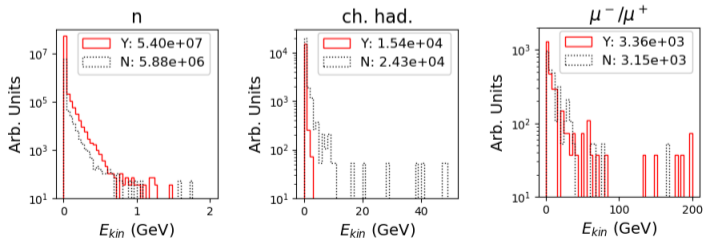
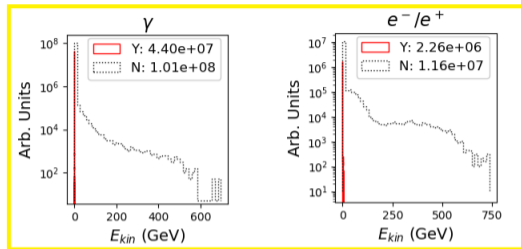


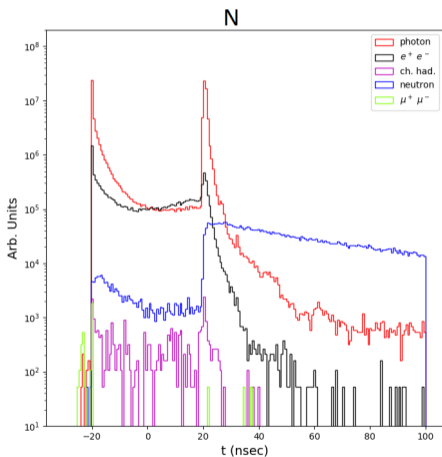
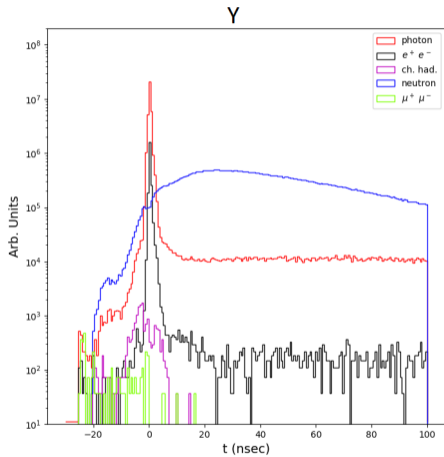
- Focus of this presentation: comparison of the two configurations Nozzle YES or NO
- Secondary and tertiary particles coordinates are referred to the exit from the ring

EXIT FROM THE RING (Z,X PLANE)

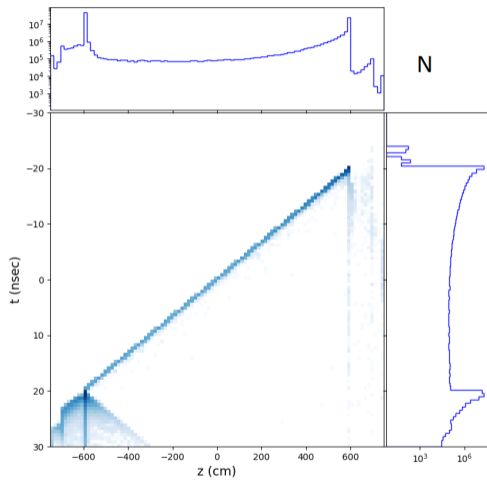
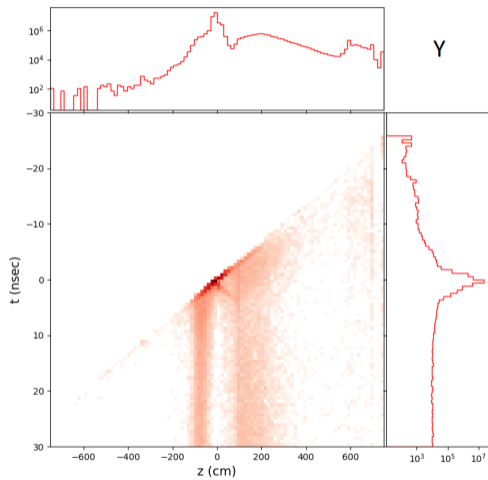


ENERGY & NUMBER

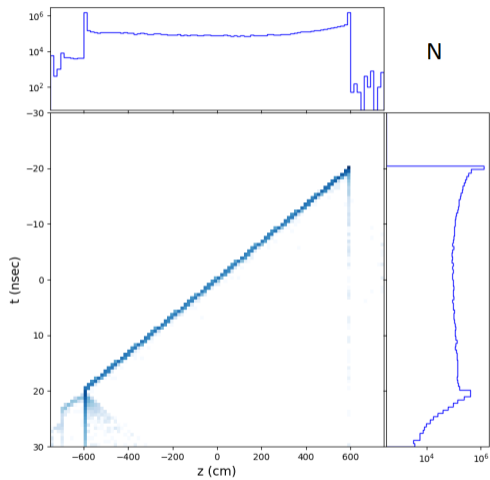
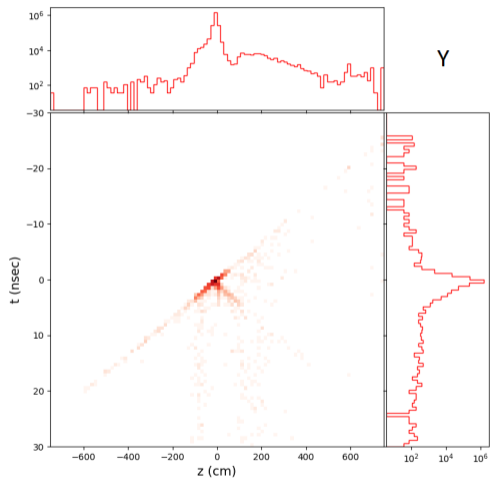




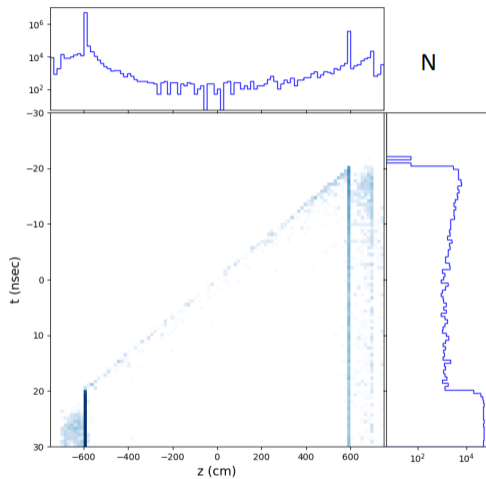
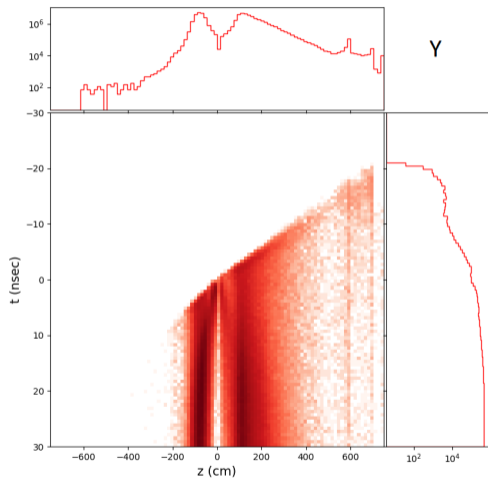
PHOTONS



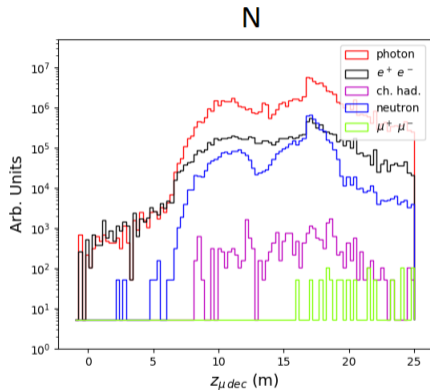
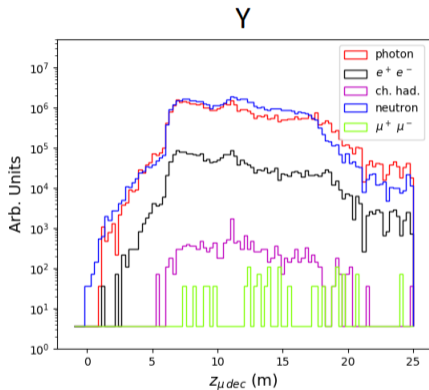
ELECTRONS/POSITRONS



NEUTRONS



PRIMARY MUON DECAY



CONCLUSIONS

- There isn't much disparity in the number of secondary and tertiary particles with and without nozzle
- The energy of γ and e^+/e^- shows a huge difference: while the most part of those particles in presence of the nozzle is within 400 MeV, without nozzle they range up to 600 GeV
- The time structure and the longitudinal coordinates at which the particles exit the ring are completely different
- The longitudinal position of primary muons decay contributing to the particles exiting the ring have a distinct distribution in the two cases