



# NA64e, physics scope



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**Main physics goal - search Light Dark Matter via  $A'$  -> invisible decays.**

**We plan to accumulate  $3 \times 10^{11}$  EOT with 100 GeV electron beam, increasing two times our statistic.**

**Additional goals:**

**150 GeV electron beam - check beam quality, trigger and background level for future search X17 boson from  ${}^8\text{Be}$ - ${}^4\text{He}$  anomaly.**

**100 GeV positron beam - check beam quality, trigger and background level for resonant  $A'$  production.**

**Electron beam - 4 weeks from 11-08-2021 until 08-09-2021.**

# NA64e, beam requirements



50-70 units on T2

Calibration and commissioning of detectors:

- 100 GeV electron beam, high intensity  $5 \times 10^6$  electrons/spill
- 100 GeV hadron beam, low intensity  $\sim 10^4$  hadrons/spill
- 100 GeV wide muon beam, low intensity  $\sim 10^3$  muons/spill

Physics data taking - 100GeV electron beam, high intensity  $5 \div 10 \times 10^6$  electrons/spill

150 GeV electron beam, high intensity  $\sim 5 \times 10^6$  electrons/spill

100 GeV positron beam, high intensity  $\sim 5 \times 10^6$  positrons/spill



# NA64e, infrastructure requirements



DESY platform for permanent using.

Gas: Ar/CO<sub>2</sub> 90/10 and 90/20.

Concrete blocks for installation of Veto hadron calorimeter and Zero Degree Calorimeter.

