Calculating chamber currents

- ep:
  - 50 kHz track trigger rate at $10 \times 40\,\text{mA}^2$
  - 30 tracks per event
  - 50 hits per track
  - $< dE/dx >= 3\,\text{MIP}$
  - 80 primary electrons per MIP hit
  - $2 \cdot 10^4$ gas gain

  $\Rightarrow$ $58\,\mu\text{A}$

- e-beam gas:
  - 40 Hz track trigger rate at 15 mA
  - 2 tracks per event
  - 50 hits per track
  - $< dE/dx >= 3\,\text{MIP}$
  - 80 primary electrons per MIP hit
  - $2 \cdot 10^4$ gas gain

  $\Rightarrow$ $3\,\text{nA}$

- SynRad
  - 2 hits per bunch crossing at 15 mA e^+
  - $< dE/dx >= 9\,\text{MIP}$
  - 80 primary electrons per MIP hit
  - $2 \cdot 10^4$ gas gain

  $\Rightarrow$ $46\,\mu\text{A}$