Feedback from **EINN 2023** in Pafos

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Interactions@EINN 2023

In Pafos, I gave a personal view on challenges we face:

***Luminosity measurements at the EIC** — guided by experience from HERA*

https://agenda.infn.it/event/33473/contributions/209459/

and got some interesting feedback from Christoph Montag – Head of the EIC Accelerator Design Group (and System Manager for the EIC Electron Storage Ring) https://www.bnl.gov/staff/montagc :

- Good news: EIC will need electron pilot bunches anyway – to study lifetimes* of non-colliding electron bunches

  ⇒ my comment: one should carefully consider optimal patterns of such bunches to be requested, to properly monitor backgrounds and detector calibrations

- Having some bunch crossings with (much) lower bunch intensities will be tricky – ¼ electron bunch current is trivial, but lower currents than that might be difficult to get; for protons it is yet more tricky

  ⇒ my question: should we request to always have a couple of low luminosity bunch crossings, to monitor event pileup?

Photon counting method (PS!) is essential for getting very high precision of relative luminosity and very good understanding of event pileup is crucial ⇒ bunch current uniformity + ***bunch-to-bunch*** **pileup** of signals in electronics

Remaining question: what about **proton pilot bunch(es)?**