First Compton Interactions seen by Cavity LPOL

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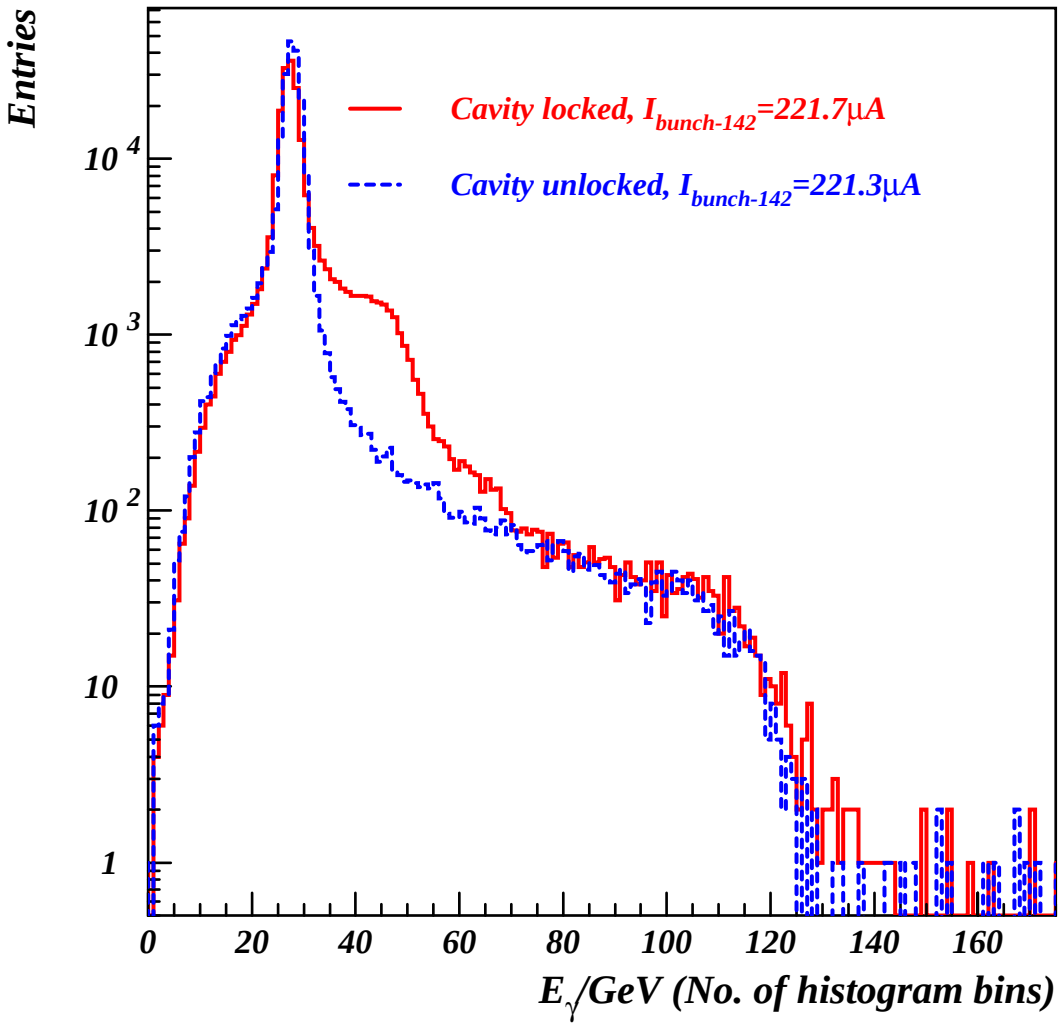
- March 10, 2005 is a milestone for the cavity LPOL project

  Compton interactions were seen online for the first time by the cavity LPOL DAQ program when a horizontal scan of the electron beam is performed

Energy Spectrum with Locked or Unlocked Cavity



An example of one colliding bunch: each histograms correspond to a data taking of ~4 seconds.

A crude estimate gives a Compton photon rate of 0.1 per bunch crossing (a refined analysis in underway).

Summary and Plans for the Next Step

Thank all involved for achieving such a significant step forward

The Compton estimator was tried but did not work as expected

two small problems were found later and fixed

will improve the estimator using the existing data

Plans

Before going to HERA machine experts

Take some brem. data (this week)

- to optimize the (hardware) delay timing for the DAQ for a working calorimeter HV setting of 850V
- to understand better the shoulder of the syn. radiation peak

With the HERA machine experts

- Use the improved Compton estimator to find the best beam setting
- Take data with laser being (fully) polarized in left- and right-hand
- Get a first idea on the precise of the polarization measurement