

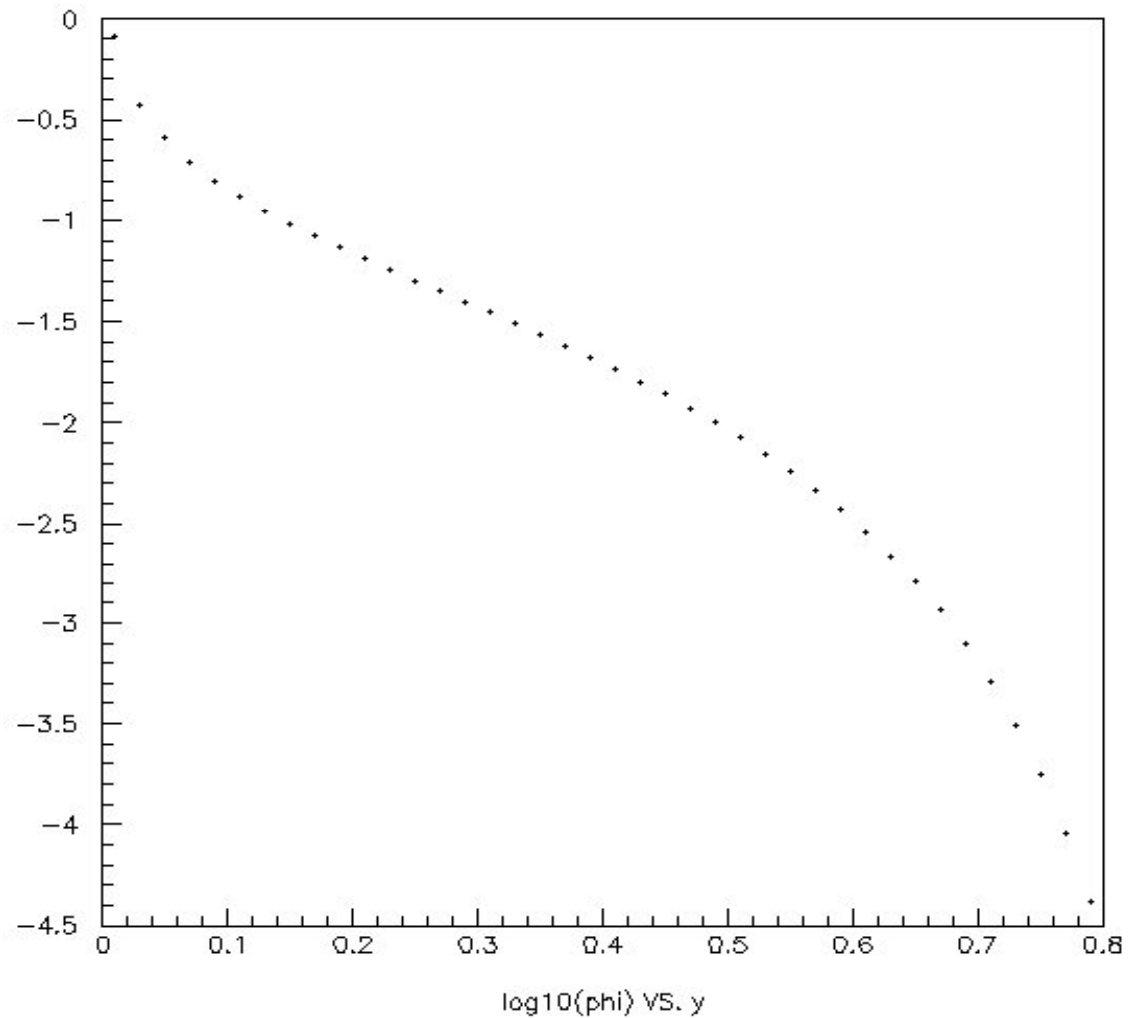
# *Thoughts on GamCal*

*G.Atoian V. Issakov A. Poblaguev M. Zeller*  
*Yale University*

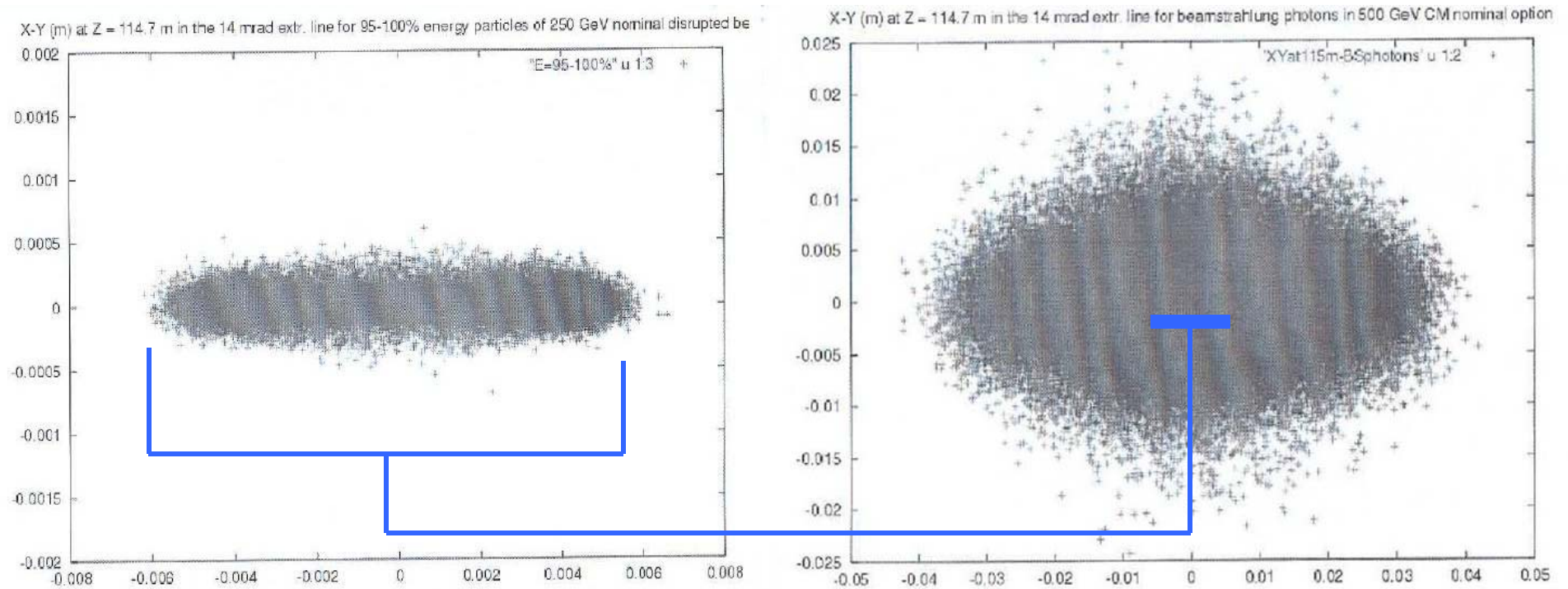
*E. Jones W. Morse*  
*Brookhaven National Laboratory*

*5 October, 2007*

*Log<sub>10</sub> of beamstrahlung probability vs. beamstrahlung energy (y=energy/energy<sub>maximum</sub>)*



## Electron and Beamstrahlung spatial profiles at 114 m



# Bill Morse's Vertical Sweep of $e^+e^-$ Beams

## Vertical offset

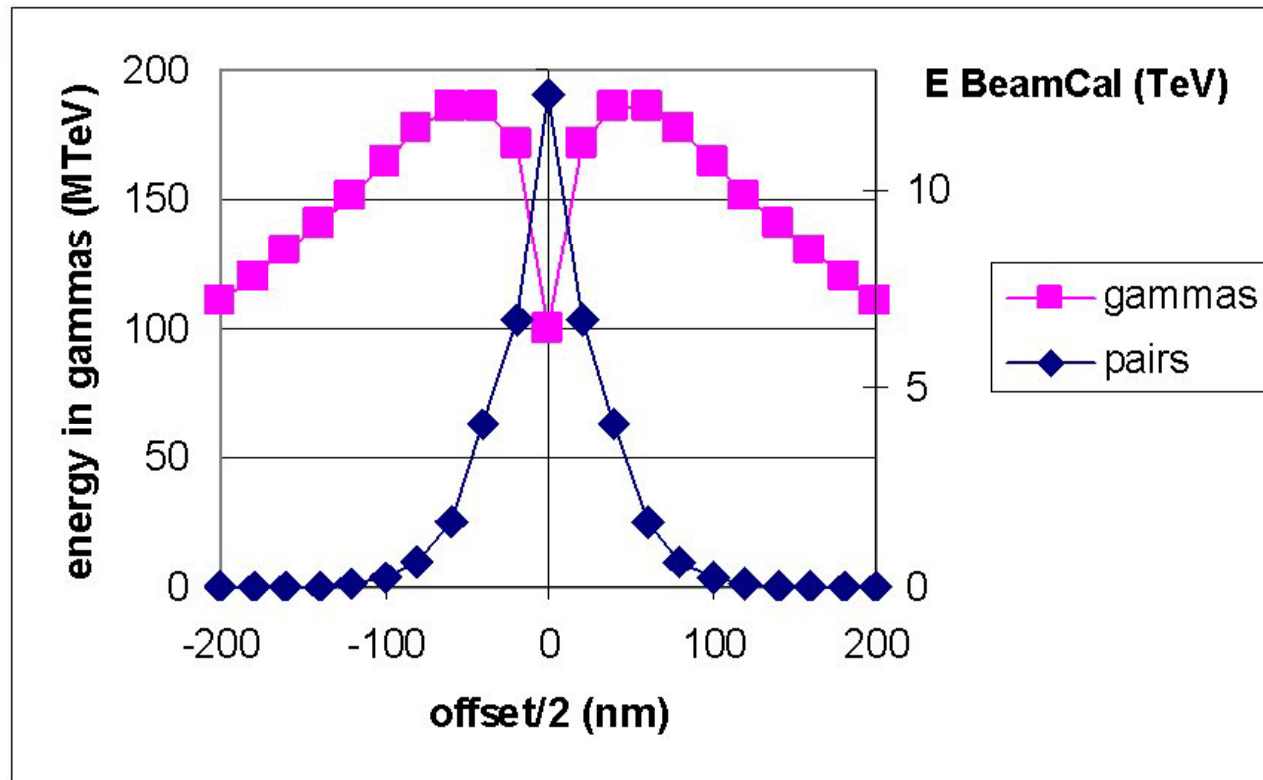
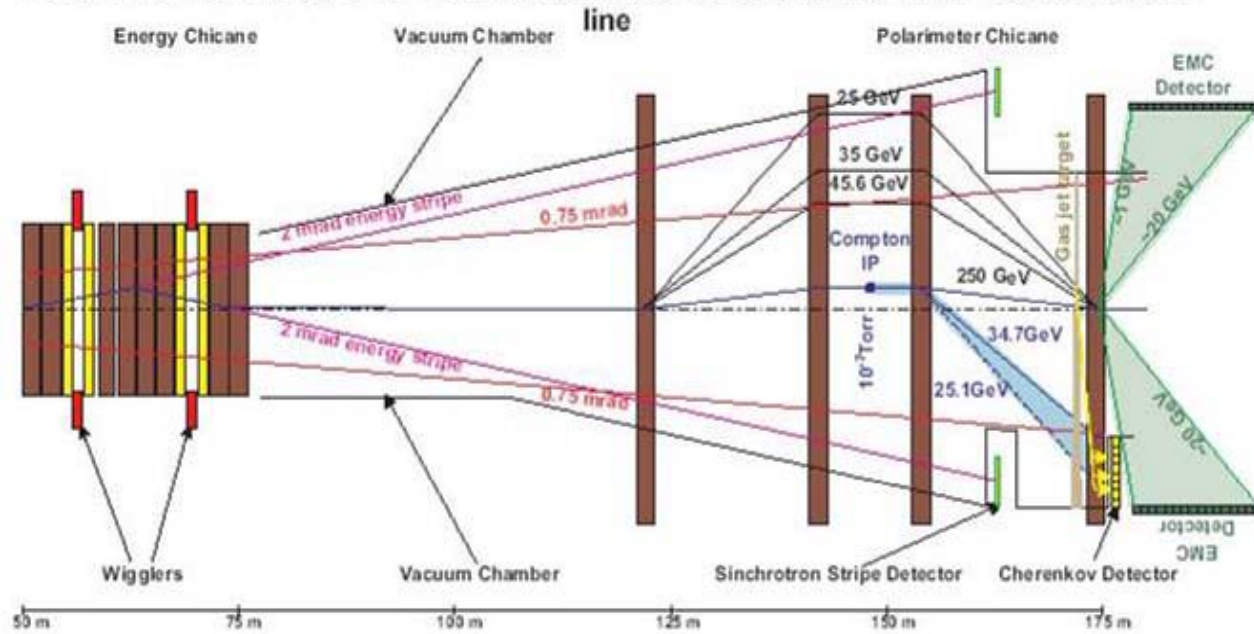
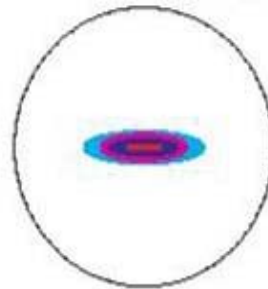
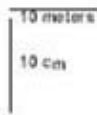


Diagram of the Energy Chicane and Polarimeter Chicane in the 14/20 mrad extraction



Beam sizes at z~185m



- Beam pipe (D~30cm)
- Electron core (hor. +/-2 cm and vert. +/-0.3 cm)
- Gamma core (hor. +/-4 cm and vert. +/-0.9 cm)
- Electron edge (hor. +/-5 cm and vert. +/-1.5 cm)
- Gamma edge (hor. +/-7 cm and vert. +/-1.8 cm)

# *GamCal Conversion Foil*

*William Morse – BNL*

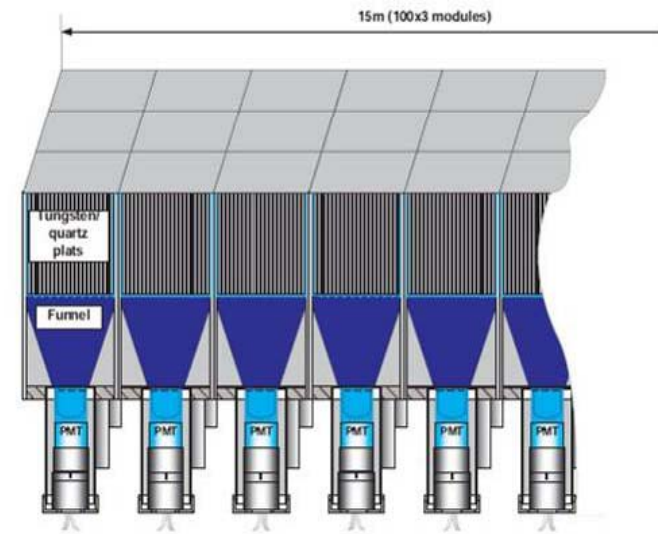
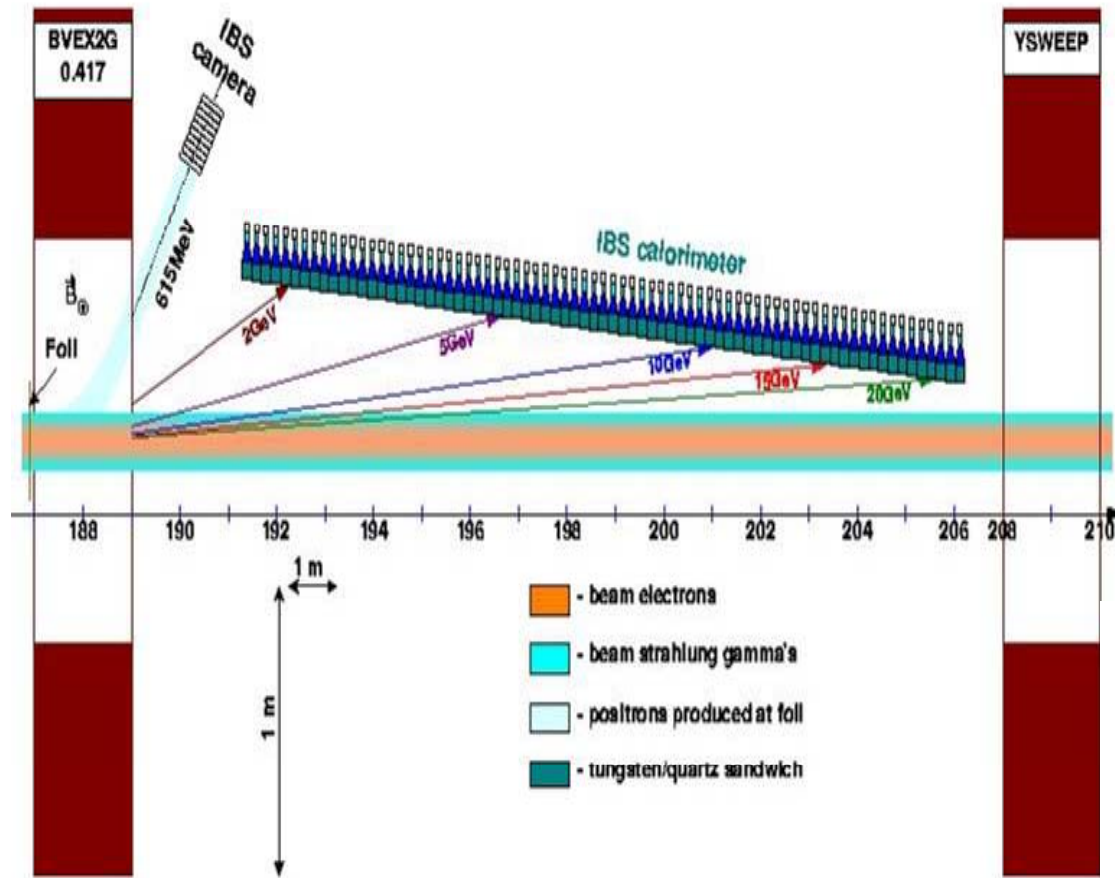
*Eric Jones – BNL and SUNY Stony Brook*

*August 21, 2007*

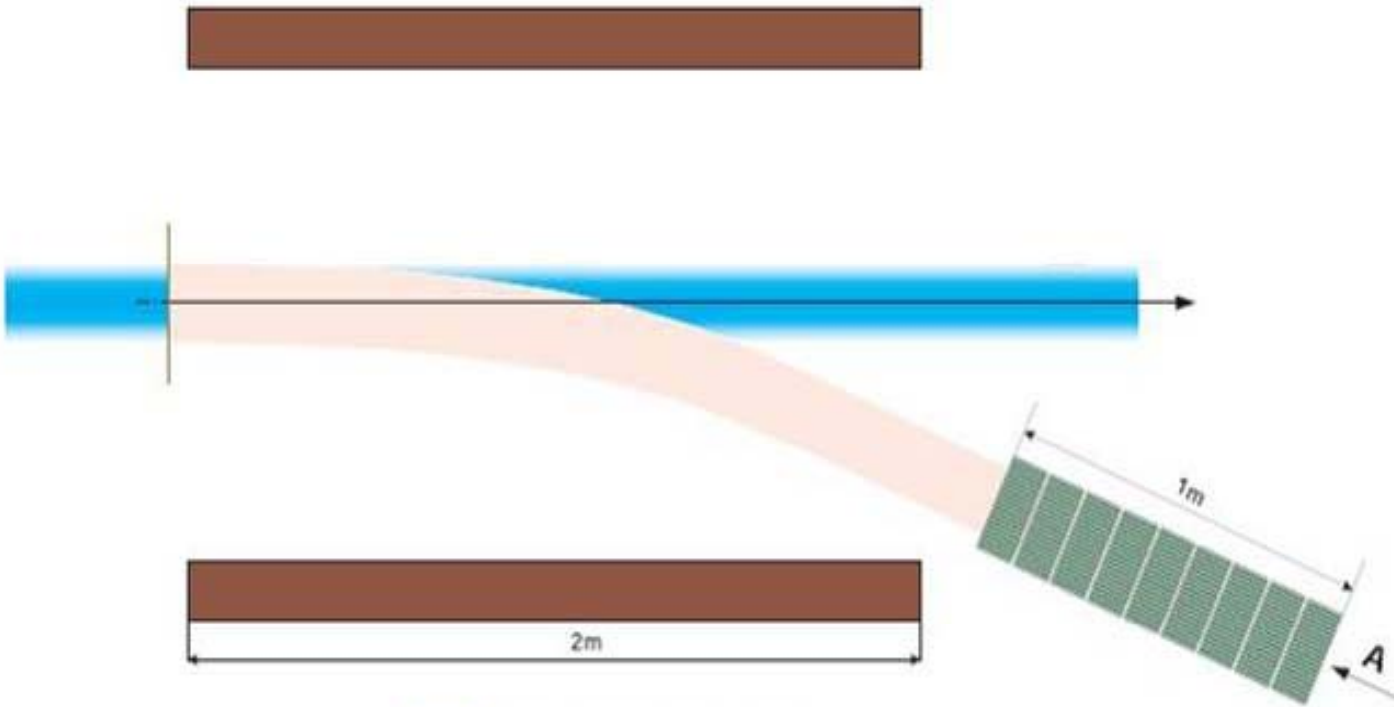
*...We discuss foil radiation damage, heating, etc. issues*





*...In conclusion, an ILC conversion foil made of CVD diamond, similar to the SNS stripping foil design, can not be ruled out at this time*

# Integrated Beamstrahlung Spectrometer



# Beam strahlung camera



-  - Beam strahlung Gammas
-  - positrons produced at foil
-  - Magnet BVEX2G
-  - tungsten collimator

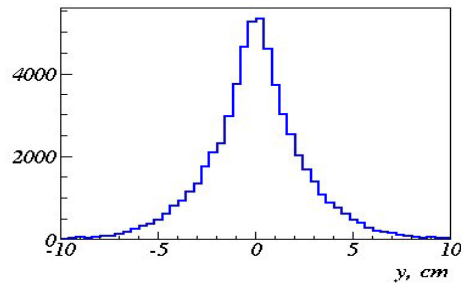
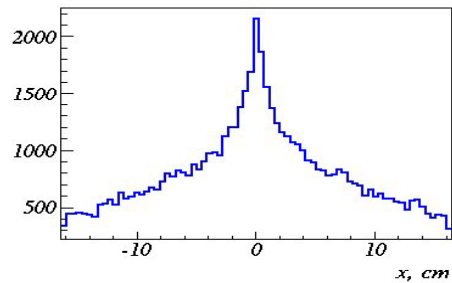
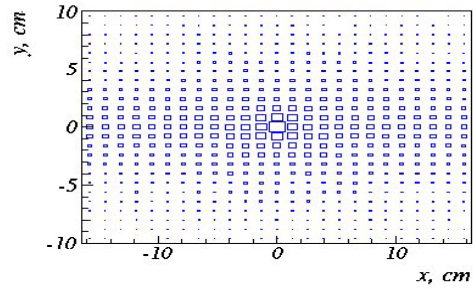
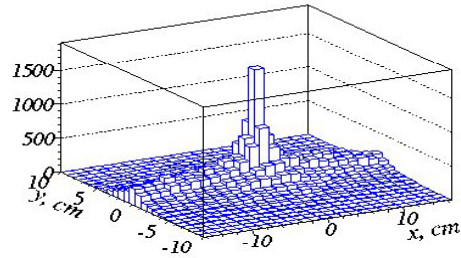
View A  
(the part of detector)





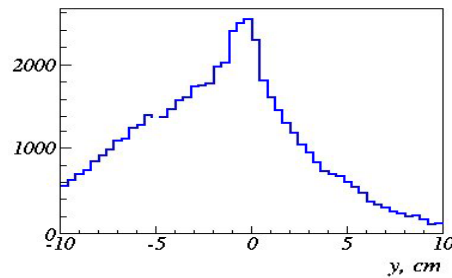
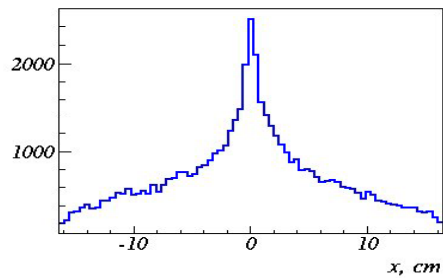
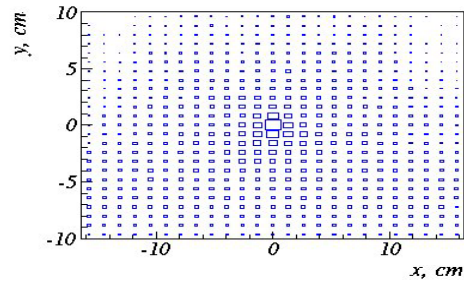
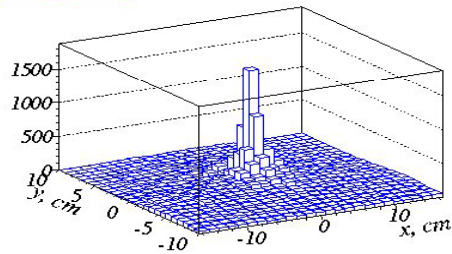
# Beamstrahlung Camera Distributions

photon\_00.dat



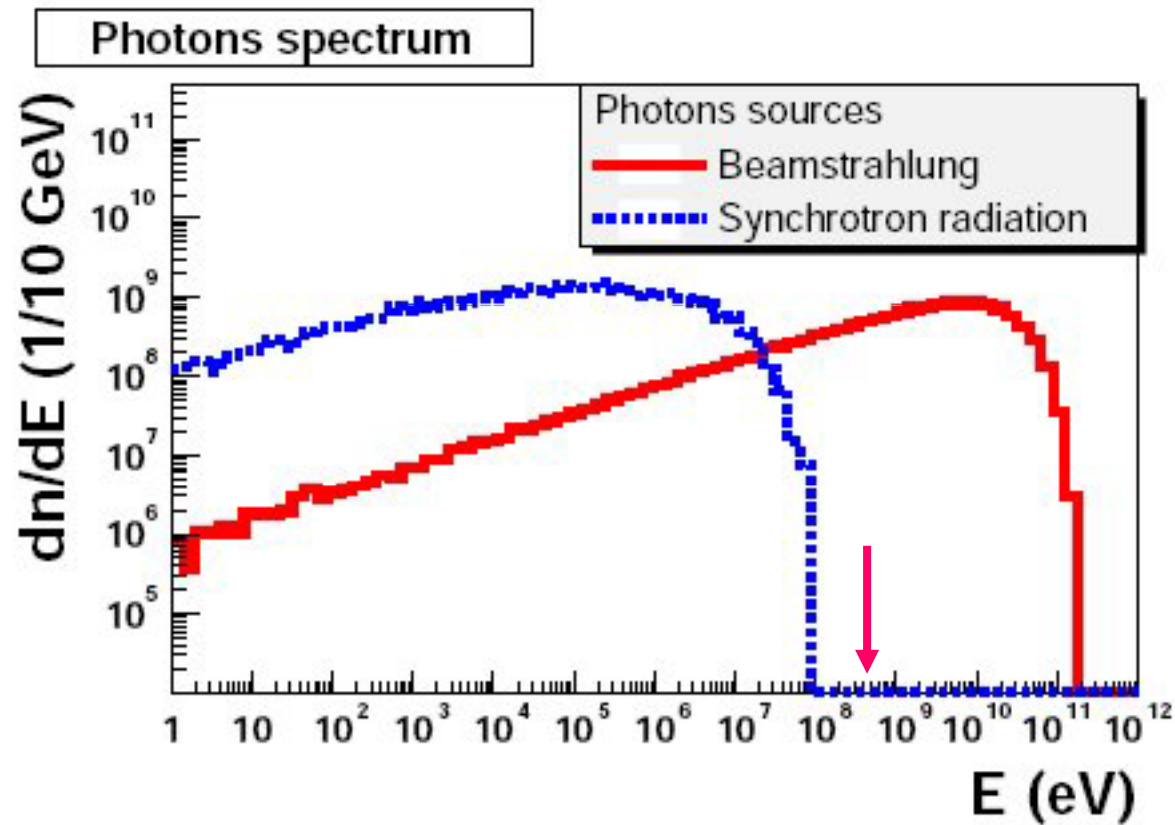
0 std beam offset

photon\_03.dat



3 std beam offset  
~ 23 nm

## Is synchrotron radiation a problem?



N. Delerue and T. Tauchi arXiv:physics/0408132 v2 (2004).