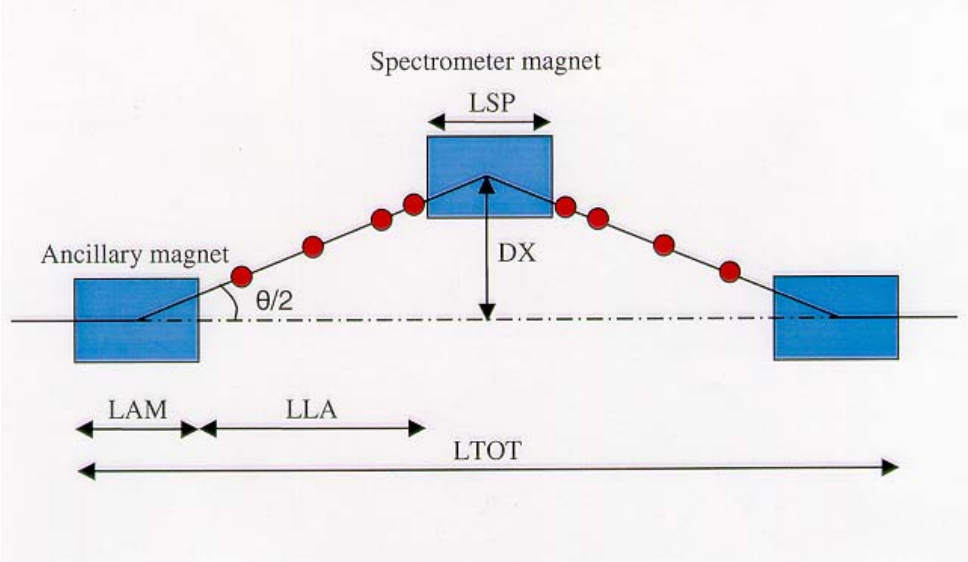
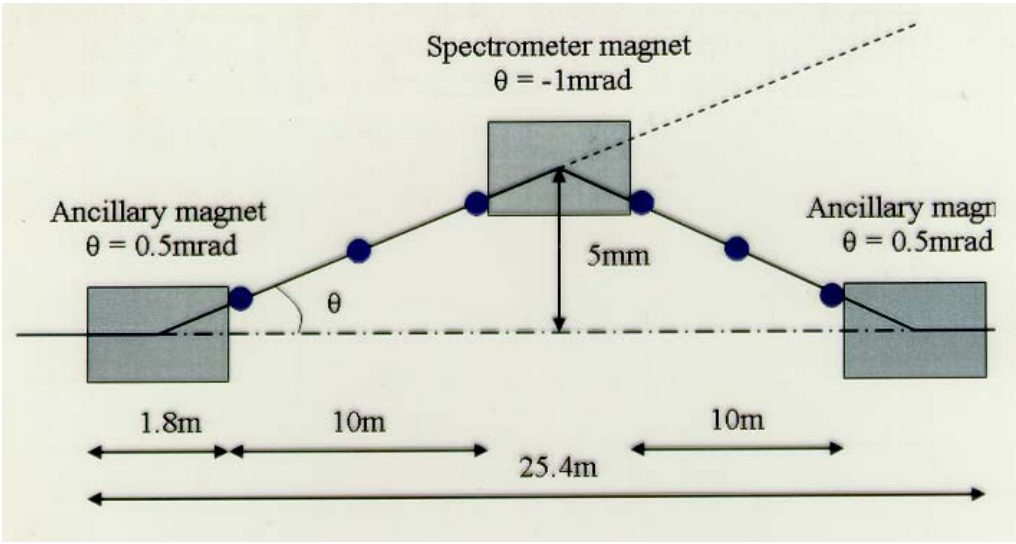
Synchrotron radiation from energy spectrometer magnets

R. Makarov

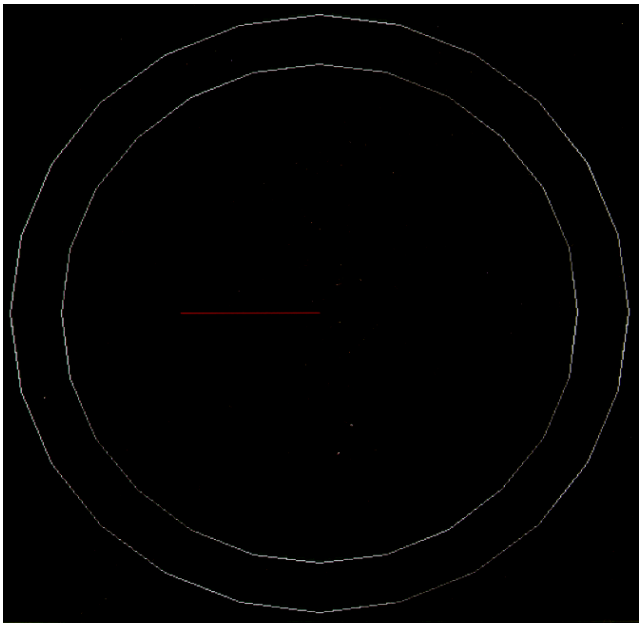
Moscow state university



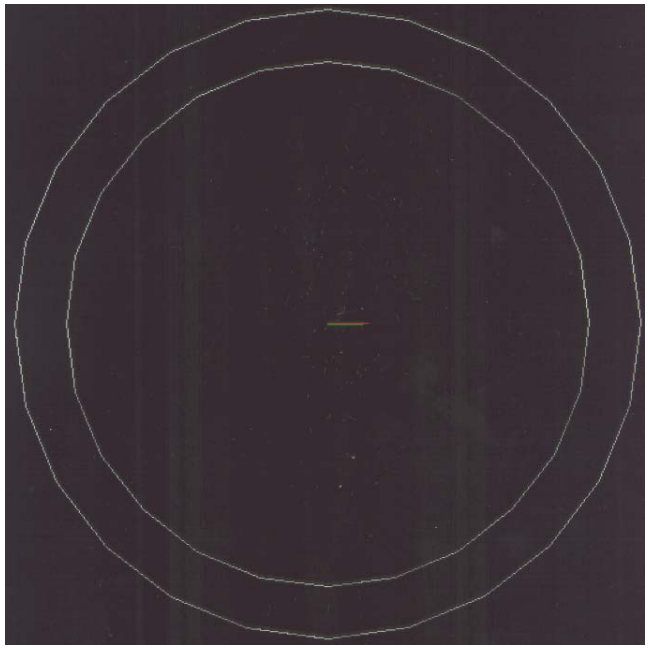


Scheme of energy spectrometer

SR radiation from spectrometer magnets

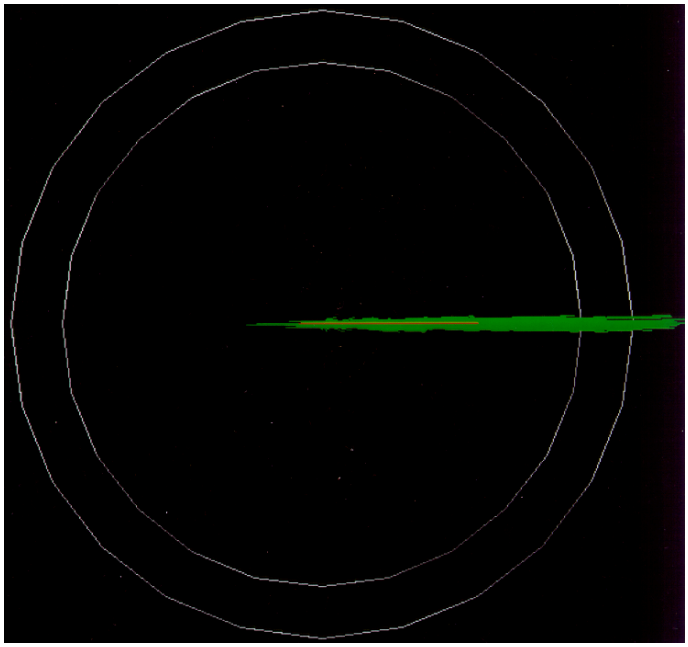


SR from first magnet at E_{beam} = 45 GeV, Bunch 1000 e^-



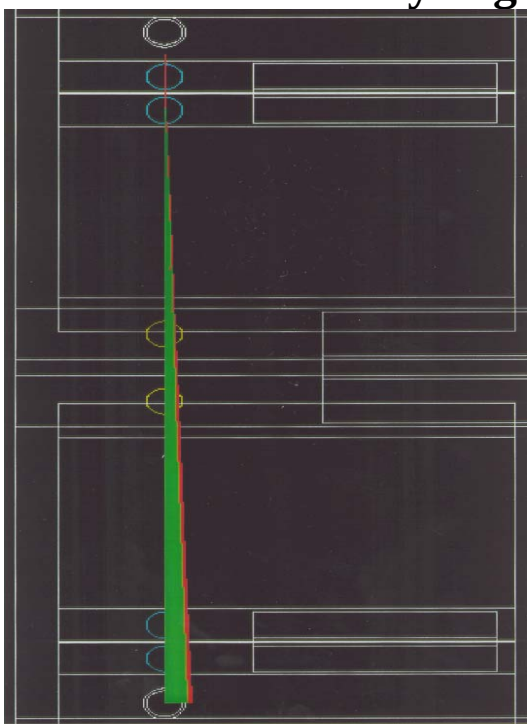
SR from third magnet

Total SR from 3 magnets

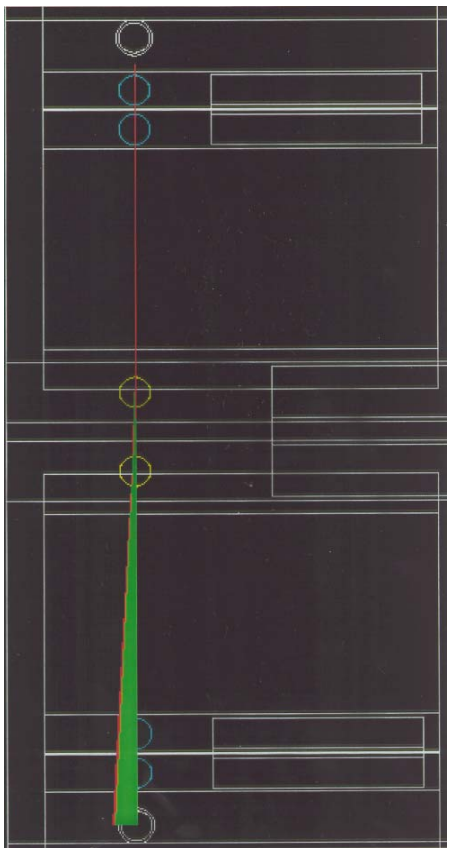


E_{beam} = 45 GeV, Bunch 1000 e^-, Total SR from 3 magnets

Comparison of SR from first and second magnet
Extraction of SR from analyzing magnet

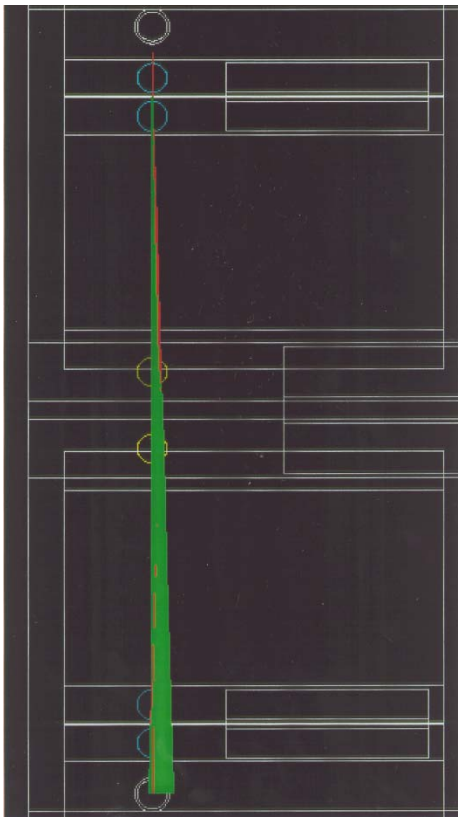


SR from 1 magnet

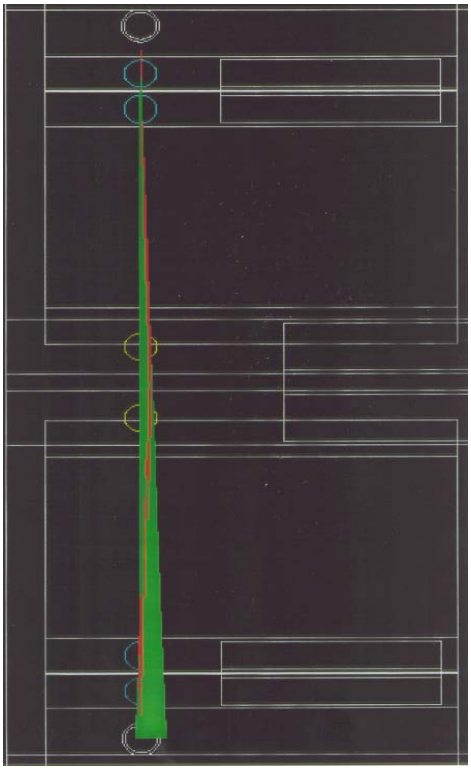


SR only from 2 magnet (other physics processes off)
E_{beam}=250 GeV bunch 1000e^-

Total SR from 3 magnets

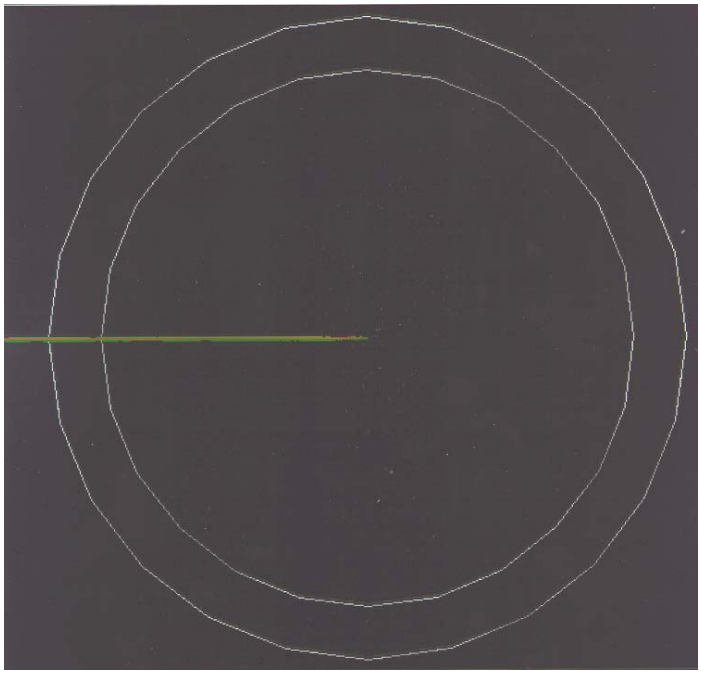


E_{beam} = 250 GeV, Bunch 1000 e^-

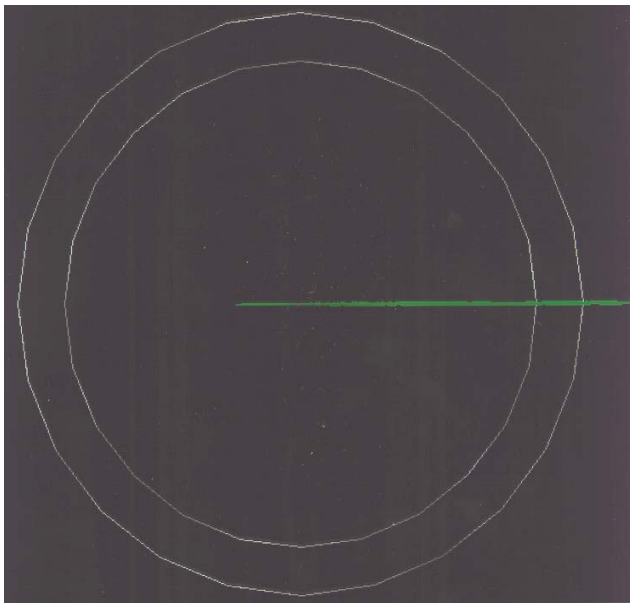


E_{beam} = 45 GeV, Bunch 1000 e^-

SR from spectrometer magnets
Extraction of SR from analyzing magnet

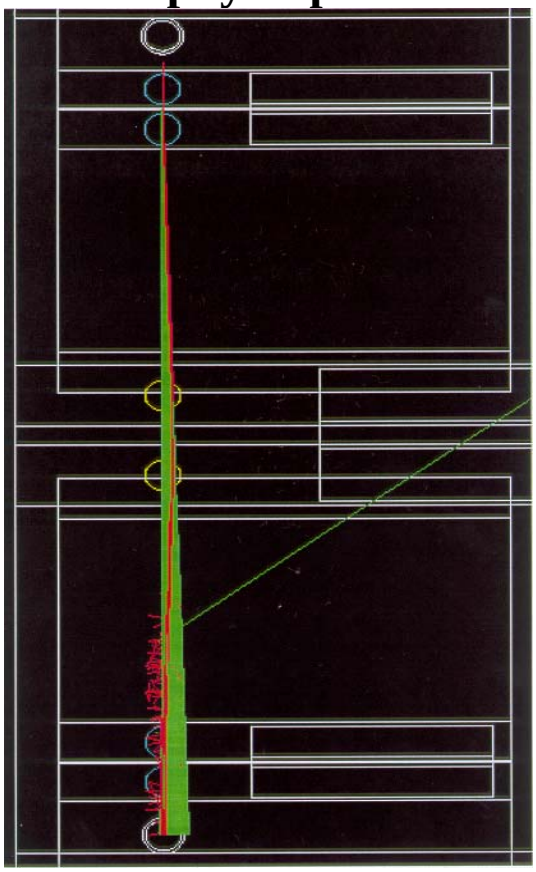


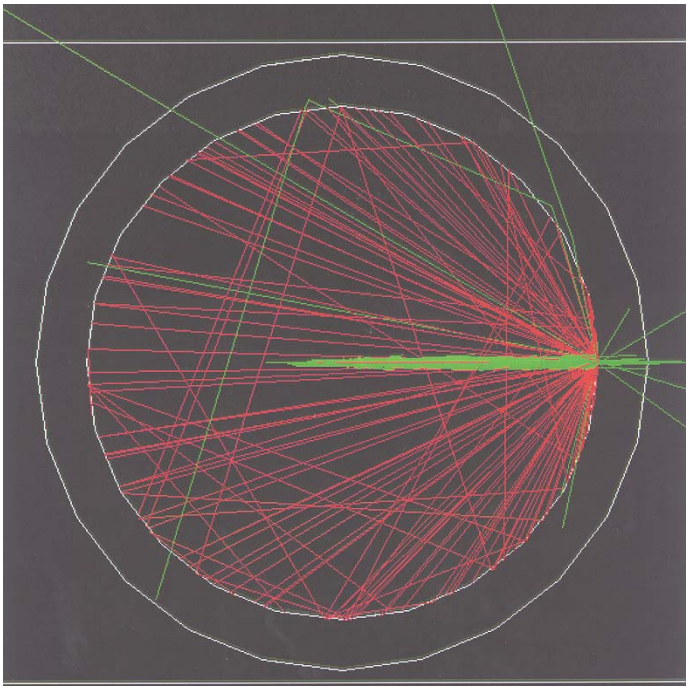
SR from 1 magnet



E_{beam}=250 GeV bunch 1000 e^-, Total SR from 3 magnets

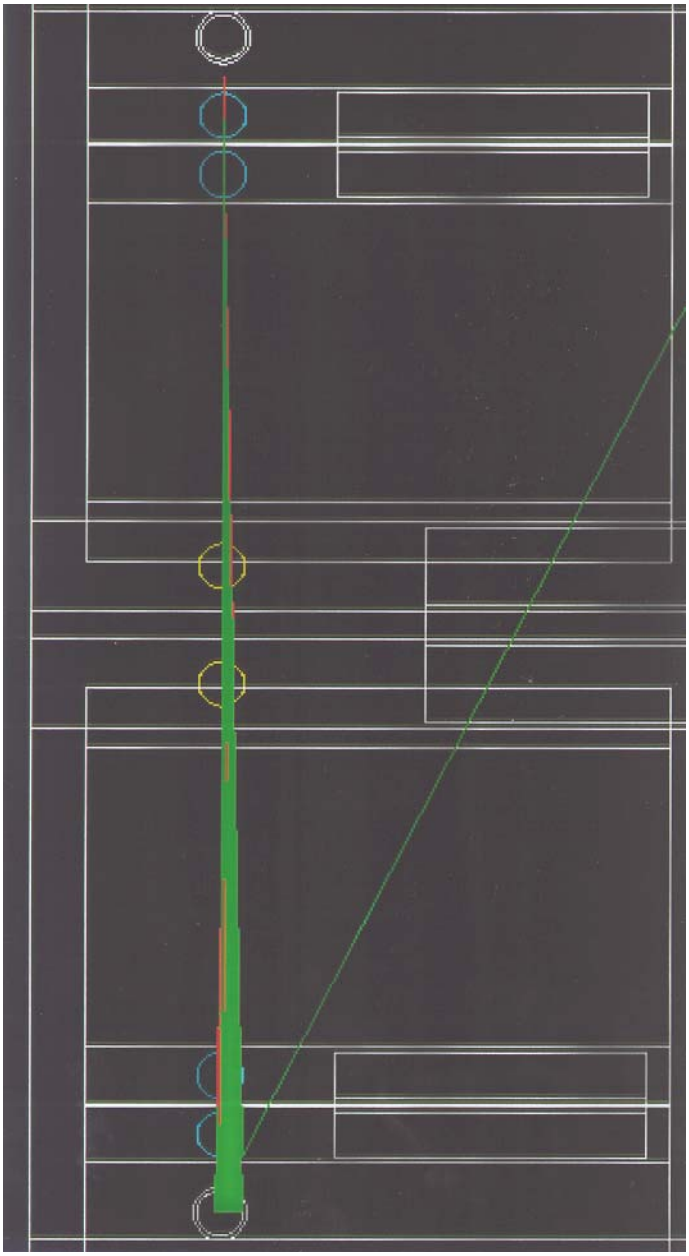
Activation of all physic processes in GIANT





Transverse picture of beam pipe
E_{beam} = 45 GeV, *bunch 1000e^-*.

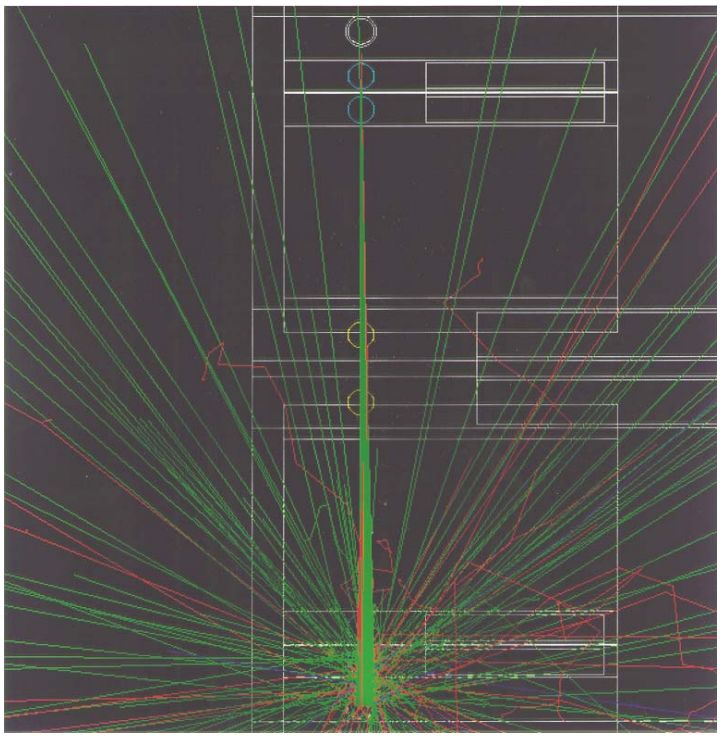
Involve in consideration: positron annihilation, the energy loss, SR, Compton scattering, gamma conversion (pair production), photo-electric effects, bremsstrahling, ionization



Longitudinal picture of beam pipe
E_{beam} = 400 GeV, *bunch= 100e*$^{-}$

All physic processes are active: positron annihilation, the energy loss, SR, Compton scattering, gamma coversion (pair production), photo-electric effects, bremsstrahling, ionisation

Activation of all physic processes in GIANT at lurge number of electrons per bunch



beam pipe,
E_{beam} = 400 GeV *bunch* = *10000e^-*

All physic processes are active: positron annihilation, the energy loss, SR, Compton scattering, gamma conversion (pair production), photo-electric effects, bremsstrahling, ionization.