

Few things from looking at fakes

you may wish to be aware of
when designing
your preferred detector

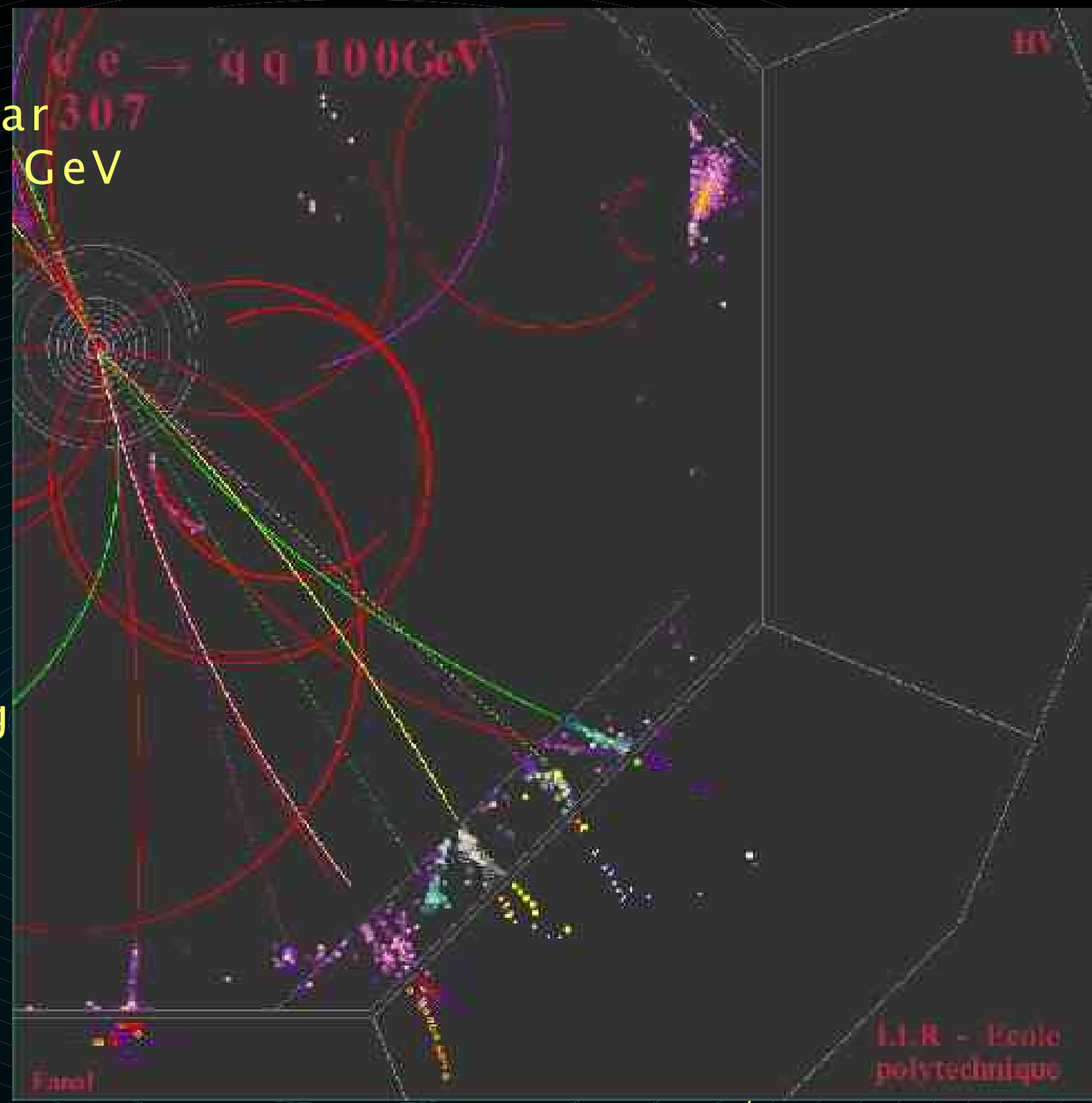
One day JC. B was looking
at his photon reconstruction efficiency
and noticed with shame that 31 events out of 1000
were presenting fakes with energy above 1 GeV!

One in particular
presented a 31 GeV
photons

already shown
at LDC meeting

conspicuous

HV



$e^- e^+ \rightarrow q \bar{q}$ 100 GeV
189

HV

That comes from a process called low energy neutron capture going via a giant resonance model!

a 6.7 MeV resonance
son of a 5 MeV neutron
son of a γ +

less conspicuous

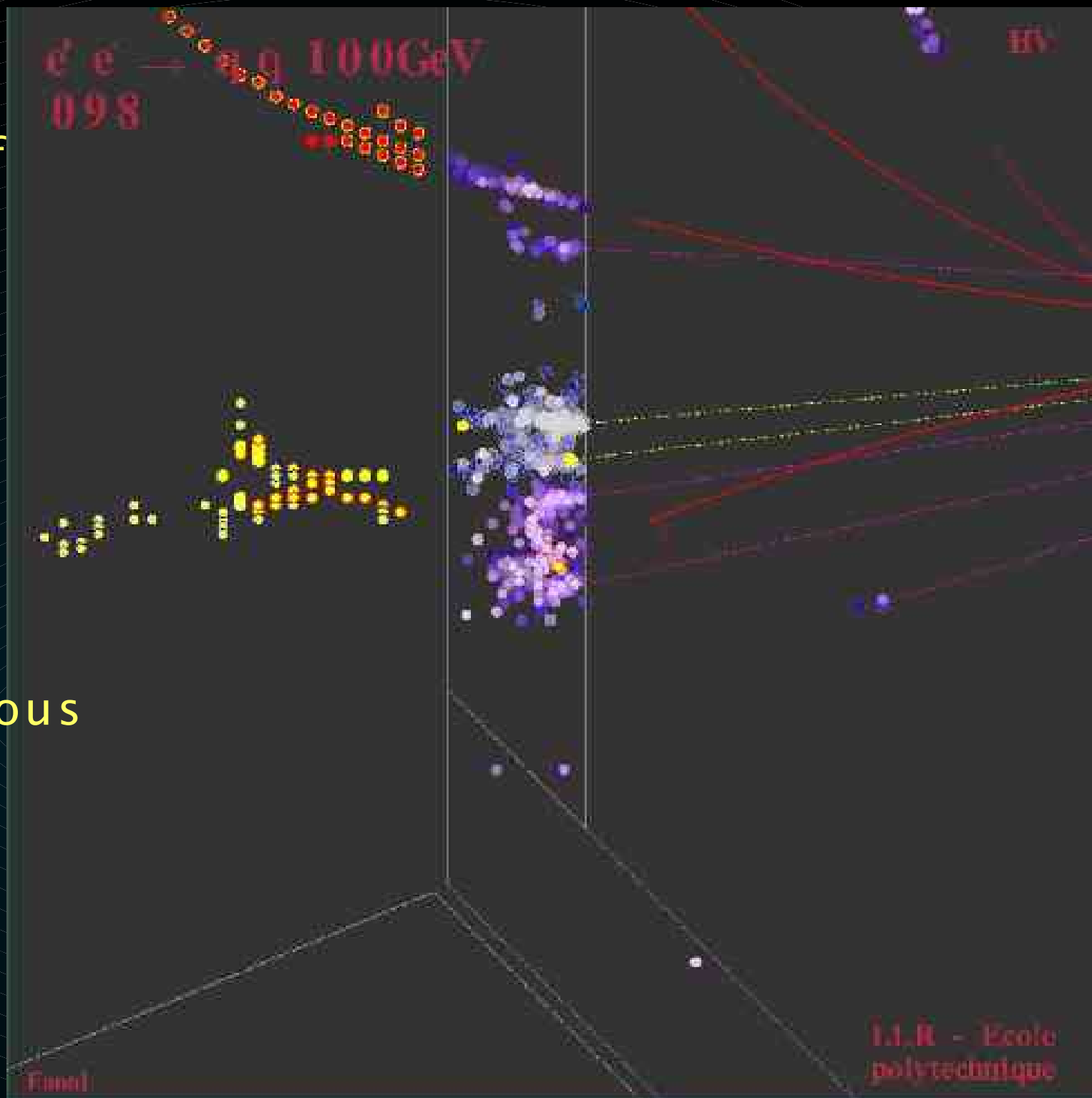


I.I.R. - Ecole polytechnique

HV

5 events out of
1000
present such a
photon with
more than
1 GeV

even
less conspicuous



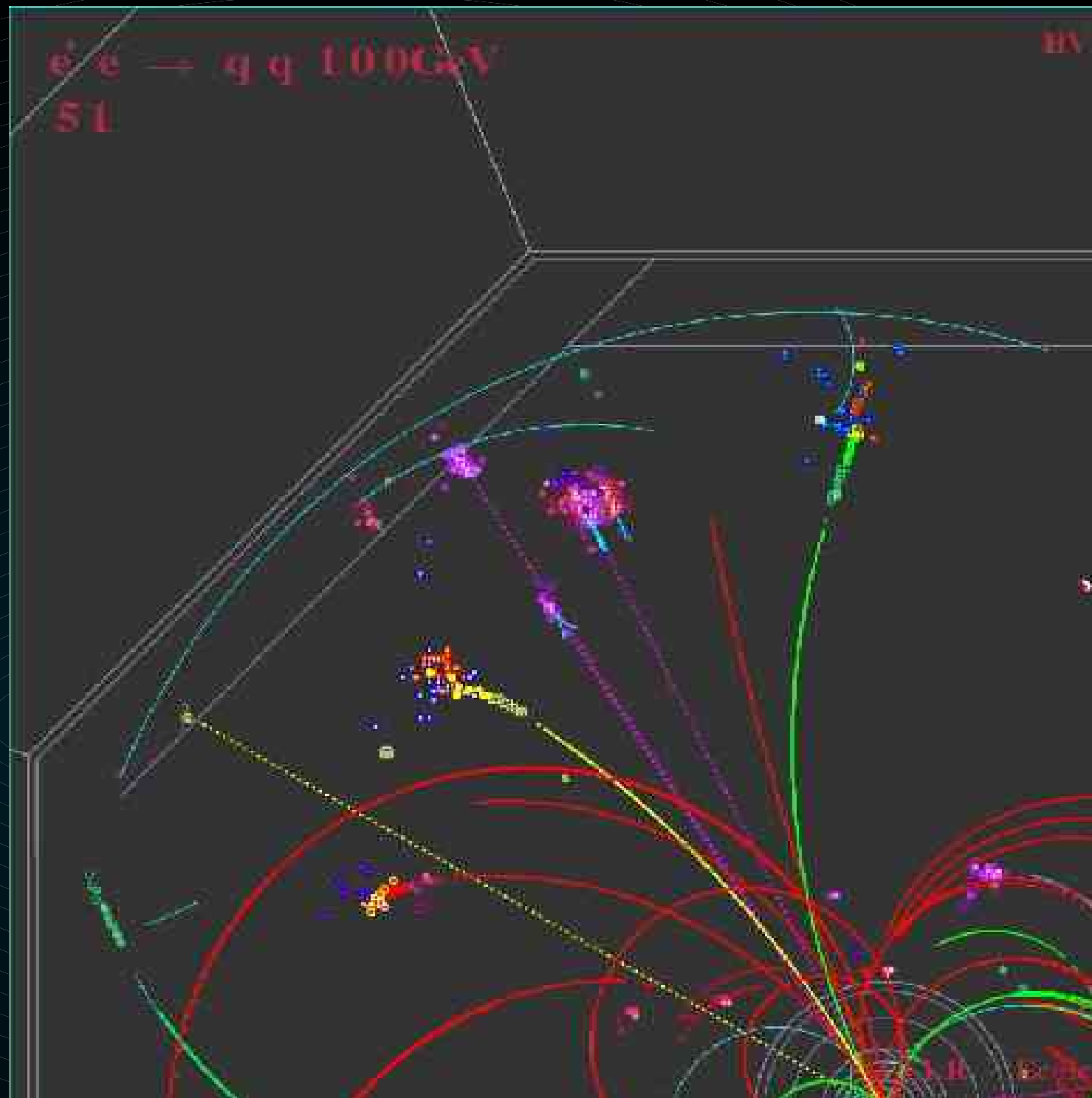
That should be solved in Geant4!

What about the other JC. B events?

Most of them are genuine photons
but where not linked to a primary photon
because they are coming from
decays, K into γ (better see the kink)
Bremsstrahlung
and mostly interactions
in particular in SIT and TPC endplates.

It impacts particle flow

may be not
totally trivial to
sign
but potentially
harmful



HV

DESY, Cance 2003

My conclusion

When considering the transparency of detectors,
say SIT or VDET or the TPC endplates

it is very important to care about minimising
interaction length
it may be more important than X0!