

Polarization and Energy Calibration

points raised in discussions

1. Beam polarization
 - is the effect of Q_s being so small generate excessive depolarization
 - $\xi_s \propto (\sigma_E \alpha\gamma)/Q_s \ll 1$ (see S. Mane's paper)
2. running scheme
 - are the two hours rise time at beginning of fill affecting run efficiency too much?
 - should we desire to reduce this further with stronger or more wigglers? fix # wigglers
 - what length of fill should be assumed?
 - can we shorten this if polarization measurement is more precise?
3. pilot bunch Touschek live-time (TLT) is short
 - what intensity is needed to obtain TLT to about 10 hours?
 - can we measure polarization well enough with this bunch intensity?
 - possibility to enlarge the intrinsic beam size to reduce Touschek effect?
4. what is the layout of the polarimeters in the accelerator ?
(whom to ask for lab, location, infrastructure etc..)
5. what is the physics case for having all Z pole data with the precise energy calibration all the time?

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6. how do we measure the energy spread? → experiments ! beam monitoring of energy spread will discuss with BI group Thibaut Lefevre et al.
7. compatibility of physics conditions (high L) and energy calibration.
8. (need to layout an iterative machine corrections strategy (beta-beat, dispersion, coupling, high orders) → Oide, Wenninger
9. Estimate of vertical dispersion at the IP to estimate how critical CM shift could be (from diff dispersion of e+ and e-). Ask Sandra Aumon
10. Bmad simulations? Longer term effort?
11. RF shifts with one/two RF sections/beam. What luminosity, performance. Can we devise a realistic scenario to tackle these errors? → Jorg, Mike, others.

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Follow ups

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- Nickolai and Oide to have discussion on where to locate the laser-beam interaction regions to optimize the rate and precision.
- need to increase number of wigglers to reduce polarization time while keeping level of polarization at good level at the Z (more than 20%) Eliana , MikeK

Once these two inputs are known :

- precision on polarization measurement
 - max acceptable strength of wigglers,
- Mike can include this in calculations of run mode requirements.

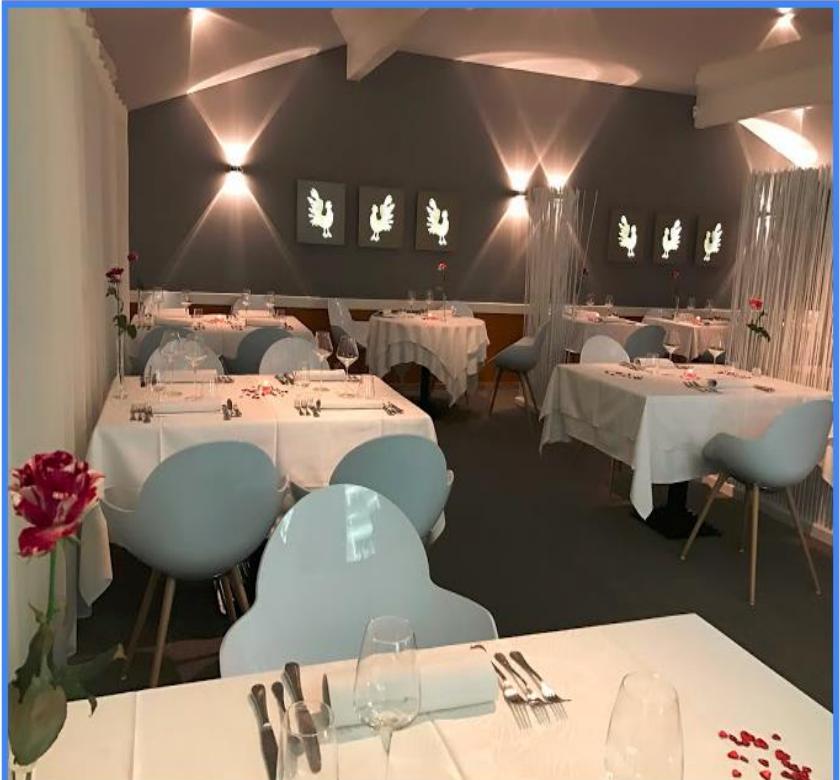
-- Eliana to present study of effect of Qs value at W.

Are we set with simulations of spin for the CDR?

Anton Bogomyagkov to complete study of energy biases

Alain to report on motivation for having the energy calibration running during all the high luminosity physics runs. (report on Tuesday)

Did I forget something?



Dinner Wednesday night 19:30

