P values for experiments

polar. meeting
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- I assume: collaborations want fill-by-fill P values each beam
  $\Rightarrow$ use our fill-averaged values
- We have each fill (P_{pC},$R_{X,Y}$) P_{pC} = sweep averaged polar.
  $R_{X,Y}$ = horiz. or vert. profile param.
  and associated stat. uncert. on P_{pC} , $R_{X,Y}$
- Most fills have: two meas. of P_{pC} from up&down stream polar.
  R_X from one polar., R_Y from other
- Some fills (?): two meas. of P_{pC} from up&down stream polar.
  same target orientation, two meas. of R_X or R_Y
- Some fills only one polar. up/downstream: one meas. of P_{pC}
  one meas. of R_X or R_Y
- Experiments need:

$$P_{coll} = P_{pC} \cdot \frac{\sqrt{(1+R_X)(1+R_Y)}}{\sqrt{(1+\frac{1}{2}R_X)(1+\frac{1}{2}R_Y)}}$$

$$\approx P_{pC} \cdot \left(1 + \frac{1}{4}(R_X + R_Y)\right)$$

- How to combine P_{pC}, $R_{X,Y}$
  different situations?

P values for experiments

P_{pC} :

- Two measurements use error-weighted mean, stat. uncert.
- One measurement use it & stat. uncert.

R_X and R_Y :

- One measurement each use them & stat. uncerts.

R_X or R_Y :

- From overall results assume R_X=R_Y
- Two measurements use error-weighted mean, stat. uncert.
- One measurement use it & stat. uncert.

- Plug into formula for P_{coll} and propagate stat. uncert.
- Systematic uncertainties? soon...

- Release to expermiments: web page / wiki ?
  palatable format?