

Track Fit With Multiple Scattering

- The methods developed to fit a track to the measured points can be used to perform a fit taking into account M.S.
 - The covariance matrix is computed
 - The same fit procedure is applied
- However the calculation is quite long.
 - In the Gluckstern paper an example is worked and assuming
 - Error dominated by Multiple Scattering
 - Equally spaced points (> 3)

$$\frac{\delta p}{p} \sim \frac{1}{0.3B} \frac{0.0136}{\beta} \sqrt{\frac{1.3}{X_0 L}}$$

- We note that
 - The resolution does not depend on momentum anymore
 - We still have a dependence on the particle velocity
- In this example the spatial resolution is dominated by Multiple Scattering
 - Since Multiple Scattering diminish with momentum p there is always a minimum momentum above which the assumption is not true and we change regime