

D0 post shutdown luminosity measurement status

Two major differences with the D0 luminosity compared to before the August 2004 shutdown.

- First, the D0 solenoid is operating at a lower current than before the shutdown. This leads to a higher gain in the PMTs for the luminosity detector. This causes us to overestimate the luminosity by between 2 and 3%.
- Second, we have modified the readout electronics to reduce the nonlinearity problems found before the shutdown. We are still mapping out the previous nonlinearity as a function of luminosity and will continue to do so as the luminosity increases. The fix also adds a small shift to the D0 luminosity at low luminosities of about 1%.
- So the overall status is that the luminosity numbers reported are overestimated by 2-4% at low luminosities and we are still working on understanding the measurement at high luminosities.