

SiD on Push Pull.

Introduction. SiD has been asked to record its viewpoint on push-pull, which is being considered by the GDE through change control. The following points, which mostly derive from a memo by Breidenbach, are for discussion.

0. For the following discussion we assume that an ILC with two IP's can realistically only deliver beam to one IP for an extended period of time (weeks). The reason for this is that alternating trains between IP's seem not feasible and tune up times for each IP, after the beam has been off, are proportional to the time the beam has been off at that IP.

1. SiD accepts that push pull will remove the cost of one beam delivery system, which is significant, give the two detectors equal access to the luminosity, and could even increase the luminosity for each compared to a two-IP scenario.

2. SiD believes that push-pull is most easily accomplished with self shielding detectors, and that self shielding is technically feasible.

3. SiD believes that the period between detector swaps be in the range of 1 - 2 months, to assure that neither detector receives a significant luminosity advantage in a single data taking period. It obviously follows that it is imperative that the period between stopping data taking with one detector and restoring luminosity for the other, is very small compared to the 1 - 2 month run cycle.

3. SiD believes there are a number of technical questions regarding the viability of push pull for the detectors which have not yet received adequate answers. They include the following:

A. After moving a detector out, then in, will the magnetic field map remain effectively unchanged? Can it be engineered to remain so?

B. Can tracking chamber alignment be restored/redetermined without time consuming calibration runs?

C. Can a detector in the out position remain full operable without the constant influx of data?

D. Can the swap time, including the time to restore luminosity, be made short enough?

There are other technical issues that, while not having well defined or engineered solutions, SiD expects not to pose insurmountable problems. In particular, SiD expects a cost effective moving system to be feasible.

4. SiD is deeply concerned about the formidable sociological issues surrounding how and when swaps are scheduled. Procedures must be devised that equitably share machine luminosity, put the burden of detector readiness on the detector which has moved on the beamline, are agreed to by both detector collaborations, and are seen as fair. We note, however, that these problems are not fundamentally different from those which will arise in a two beamline scenario, regarding when to swap beamtime.

