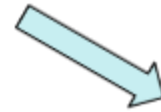


Plans for work on the BDS

Jürgen Pfingstner
26th of April 2012

Task 1

Topic: Extended ground motion studies



More realistic static
tuning procedure

Long-term
alignment tuning



Effects have strong
similarities

Goal: Development of an **on-line strategy to correct static/long-term misalignments** with no initial system knowledge and possibly “parasitically”.

Task 1 cont.

Strategy: Starting with main linac and extending work afterwards to BDS

Necessary Studies:

- Identifying which **type of beam quality degradation** (e.g. correlations, filamentation, ...) occurs at which **time scale**
- Testing existing strategies with perfect system knowledge
- **Evaluating the necessary system knowledge**
- Design strategies to obtain the necessary system knowledge and use it for corrections.

Task 2

History:

- Electrical engineer **Sachin Gupta** from the Indian Institute of Technology, (Kanpur), contacted us to make his **Bachelors work** (1 year) at CERN.
- Planed stay for 3 month in summer
- Supervisor of wants to send **an physicist from the institute** instead of Gupta to better work into the topic.
- This, so far unknown, physicist will then collaborate with Gupta in India.

Task 2 cont.

Topic:

- We found a certain **BPM measurement pattern** that is highly **correlated with** the yx' **beam correlation at the IP**.
- Idea is to try to find other BPM meas. patterns that are correlated with other beam correlations.

Application:

- These BPM patterns **could be used for the FF tuning** in addition to the luminosity signal.
- Ideal scenario is to decouple and thereby speed up the FF tuning.