

Commissioning Chicane

Proposed idea

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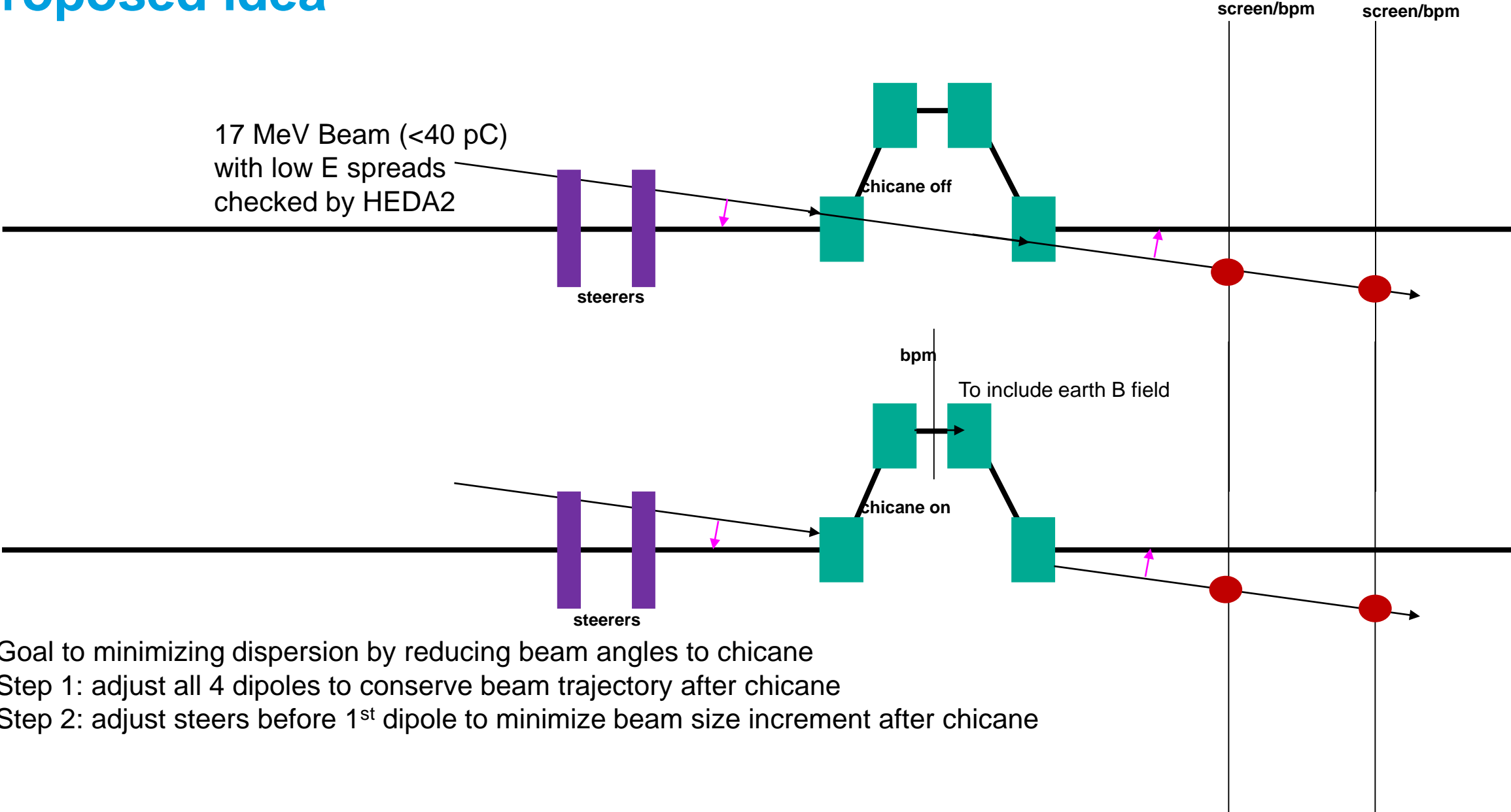
Plan

- Learning phase 1
 - Observe how dipole currents independently (or same current) affect beam trajectory
 - Observe how steerers affects energy dispersion
 - Scan parameters by hands
 - Use different electron energy and energy chirp

- Learning phase 2
 - Beam matching
 - R56

- Future Matlab script to find optimized dipole currents and steerers
 - Simplex?

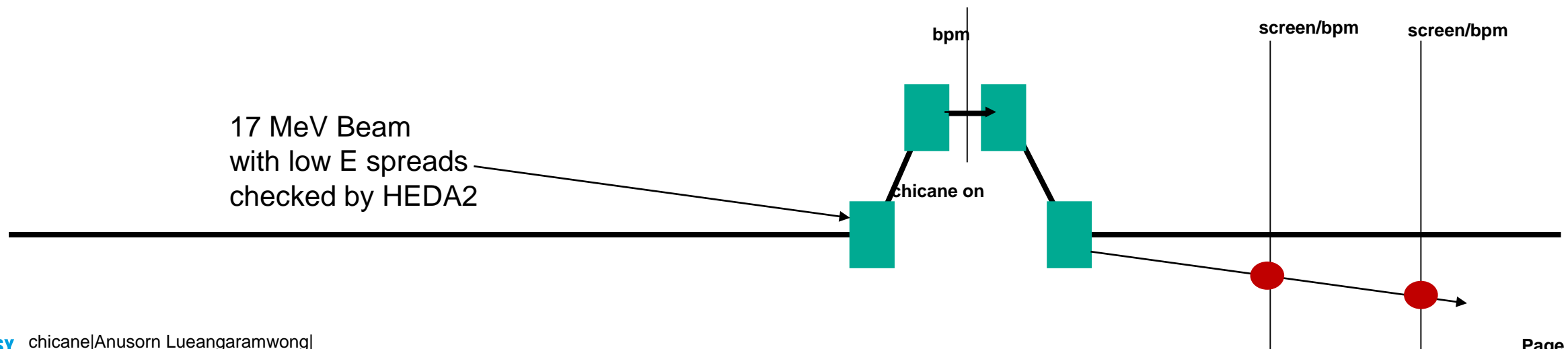
Proposed idea



- Goal to minimizing dispersion by reducing beam angles to chicane
- Step 1: adjust all 4 dipoles to conserve beam trajectory after chicane
- Step 2: adjust steers before 1st dipole to minimize beam size increment after chicane

Step 1: trajectory

- Prepare 17 MeV beam (<40 pC) with
 - low E spreads checked by HEDA2 → only trajectory check
 - Slightly higher E spreads → dispersion check
- Deguass all dipoles and record beam positions after chicane
- Turn on first 2 dipoles and find the beam at the center of chicane
- Turn on all dipoles with same current first and slightly adjust them individually for conserved beam position on screen/bpm after chicane



Step 2: dispersion

- Change steerer settings and check beam size on screen after chicane
- (Redo step 1 for new steerer settings)

