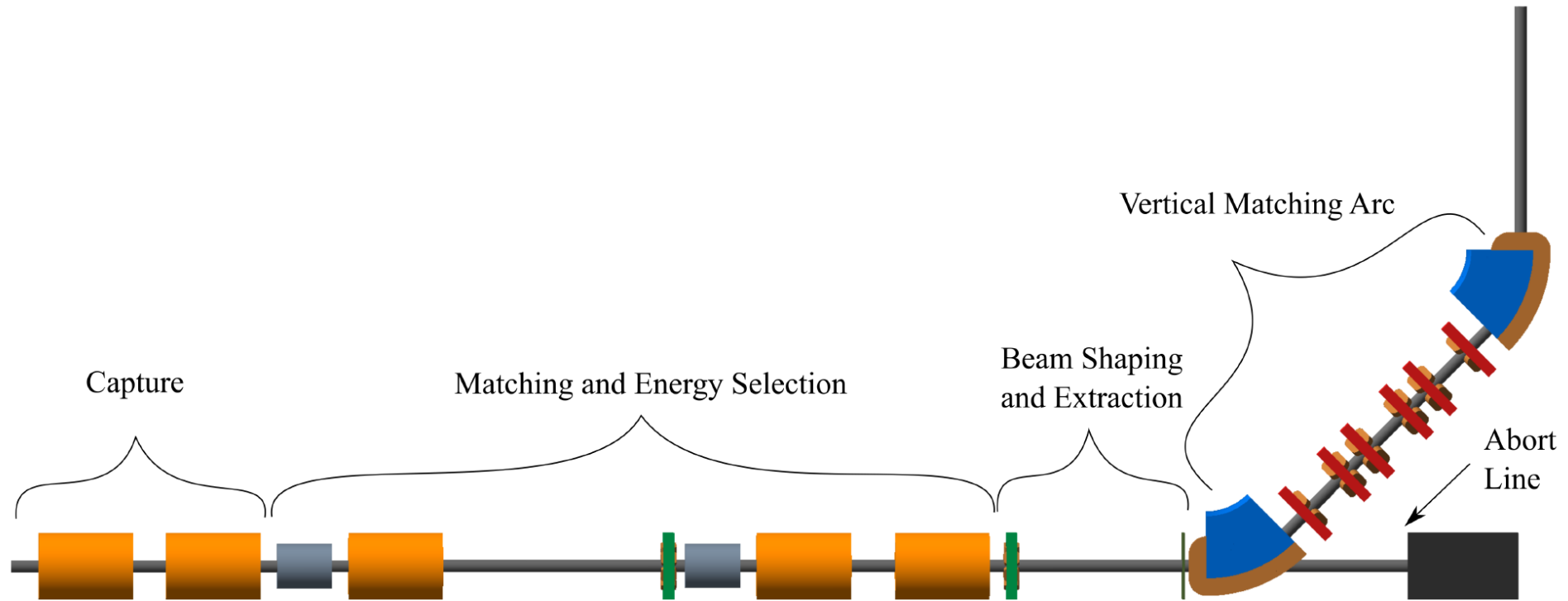


# LhARA WP6 Meeting materials

01/11/2022, J. Pasternak

# Current Baseline



# Issues with current Baseline

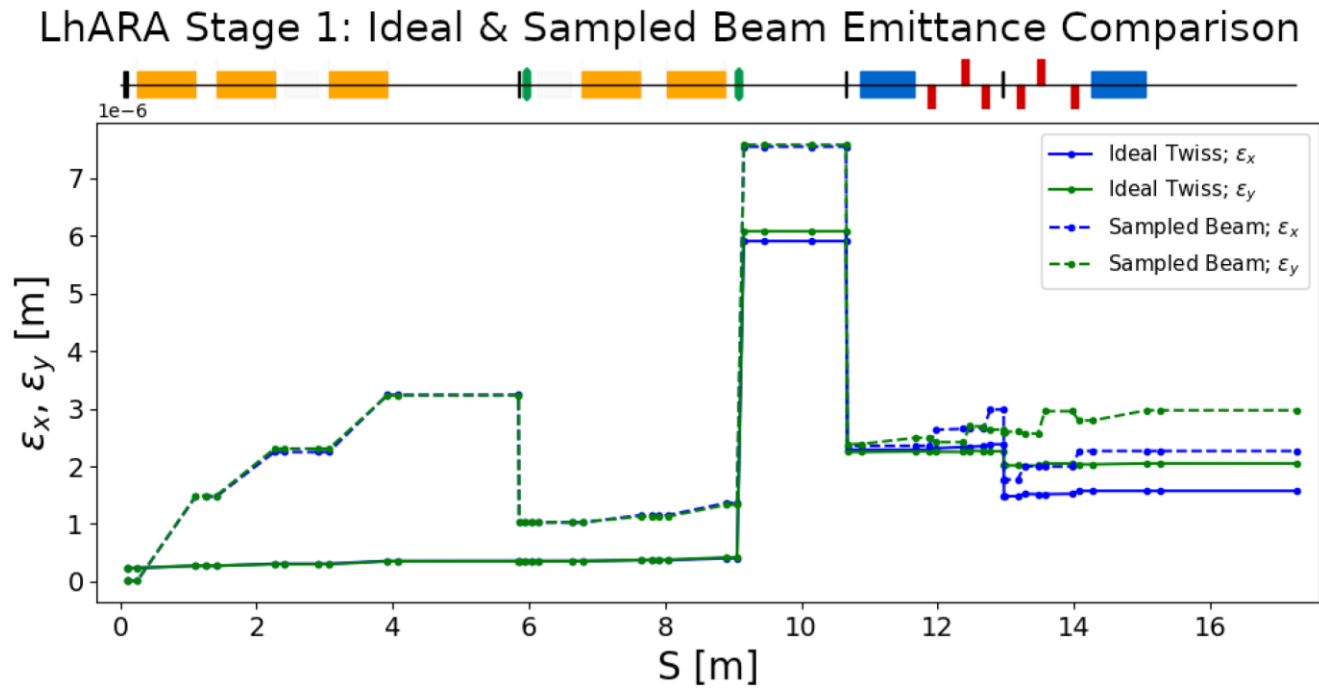
- Requires update of the position of the 2<sup>nd</sup> RF cavity and energy collimator
  - Some rematching is needed
- No specification for the placement of the Wien filter
- Requires 2 baseline GLs to perform point to parallel transformation (at least with the standard parameters from pre-CDR)
  - No direct method of externally filling the first GL with the electrons
  - Difficult pumping for the first GL
    - Task is to check those issues with the most advanced target simulations (from HT)
- Position of octupoles for the control of the final distribution
  - Not clear how to address this issue in the current baseline
    - It can be address in the alternative version with quadrupoles

# HT's distribution parameters

Parameter	Ideal Beam	Sampled Beam
$\beta_x$ [m]	$5.4 \pm 0.1$	$145.4 \pm 0.7$
$\alpha_x$	$-56.0 \pm 0.4$	$-1458.6 \pm 6.8$
$\epsilon_x$ [m rad]	$(2.3 \pm 0.03) \times 10^{-7}$	$(1.4 \pm 0.008) \times 10^{-8}$
$\beta_y$ [m]	$5.3 \pm 0.1$	$149.1 \pm 0.8$
$\alpha_y$	$-55.2 \pm 0.4$	$-1496.3 \pm 8.4$
$\epsilon_y$ [m rad]	$(2.4 \pm 0.03) \times 10^{-7}$	$(1.3 \pm 0.008) \times 10^{-8}$

- Values obtain by myself after taking the mean are: 141.3m, -1418.4 and  $1.43 \times 10^{-8}$  m rad
  - ?

# Simulation of Baseline with HT's distribution



# Alternative baseline

