

GENERAL ALIC REQUIREMENTS

1. e+e- sources

- Emittance, Current, etc.
- *Conventional: e+e- damping rings*

2. e+e- acceleration

- Positron acceleration
- High effective accelerating gradient
- Staging for high total energy
- Relevant main beam currents
- Main Beam Quality: ε , $\Delta E/E$, etc.
- Power Source: Drive Beam
- Site efficiency
- Controlling beam instabilities

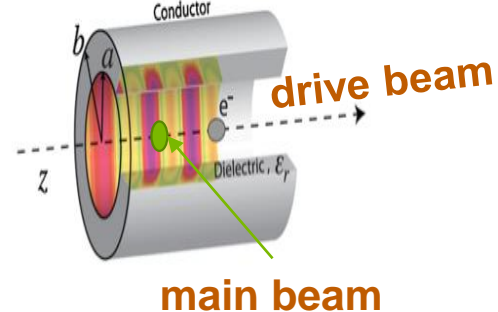
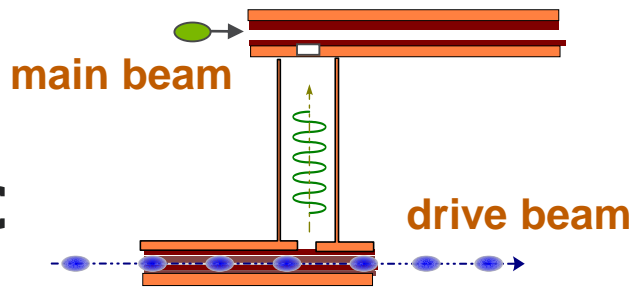
3. Beam Delivery System to IP

- *Conventional: Final focus optics, BNS damping*

4. Early applications within or beyond HEP

5. Collider parameter set

SWFA: PARAMETERS FOR 1 STAGE OF ALIC



Parameters	TBA requirements	CWA requirements
Structure	High-Breakdown, Low Loss, Low cost	High-Breakdown, Low Loss, Low cost
Drive beam current	65A, 25 nsec (1 GHz x 65nC)	10 nC, single pulse
Drive beam shape	Triangle (for efficiency)	Double Triangle (BBU cont'l)
Main beam current	6.5A ,77ps, (26 GHz x 0.5nC)	1 nC bunch, High Rep Rate
Main beam shape	Reverse trapezoid	Reverse trapezoid
Demonstrate BBU control	HOM damping (long range)	BNS damping (short range)
RF Power	1GW, 20ns	TR = 10
Main linac frequency	10's GHz	1THz
Gradient	350MV/m	1 GV/m
Stages	2 stages	2 stages
Site Efficiency	15%	15%
Main Energy	500 MeV	100 MeV