

Investigating the Post-Collision Line for the 380 GeV Stage of CLIC

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Disclaimer – This will be a short talk!

This work has just started. In fact, I am still currently learning to use BDSIM. As such, this talk is a bit out of the ordinary. In a way, it's more of an invitation for input and advice rather than a report of progress, since progress will be forthcoming.

So, if you have advice, comments, questions, or concerns, I invite you to discuss with me during the talk or email me at

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What will I be presenting today?

1. Goal of post-collision line study
2. Previous work
3. Rough plan-of-attack
4. Audience input

Goals of post-collision study

Guide the beam to the dump

- If can scale down 3 TeV version, do that first
 - See if can improve on scaled-down 3 TeV version
 - Decrease radiation damage
 - Decrease number of components
 - Reduce costs
- Check if ILC version can be made compatible
 - May be unfeasible
- If above fails, redesign
 - This is a backup, and likely unnecessary

Previous studies

Previous work in CDR for 3 TeV

- Later work performed and improvements made
 - L. Deacon in 2013
 - Removed magnets
 - Reduced radiation damage to magnets
 - Reduced stray fields to incoming beamline
 - IN THE ETHER – No available lattices or codes to be found
- Currently using CDR design lattice, will adjust as needed
- Have latest ILC lattice if CLIC CDR lattice is unsatisfactory

Strategy



Trying not to re-invent the wheel

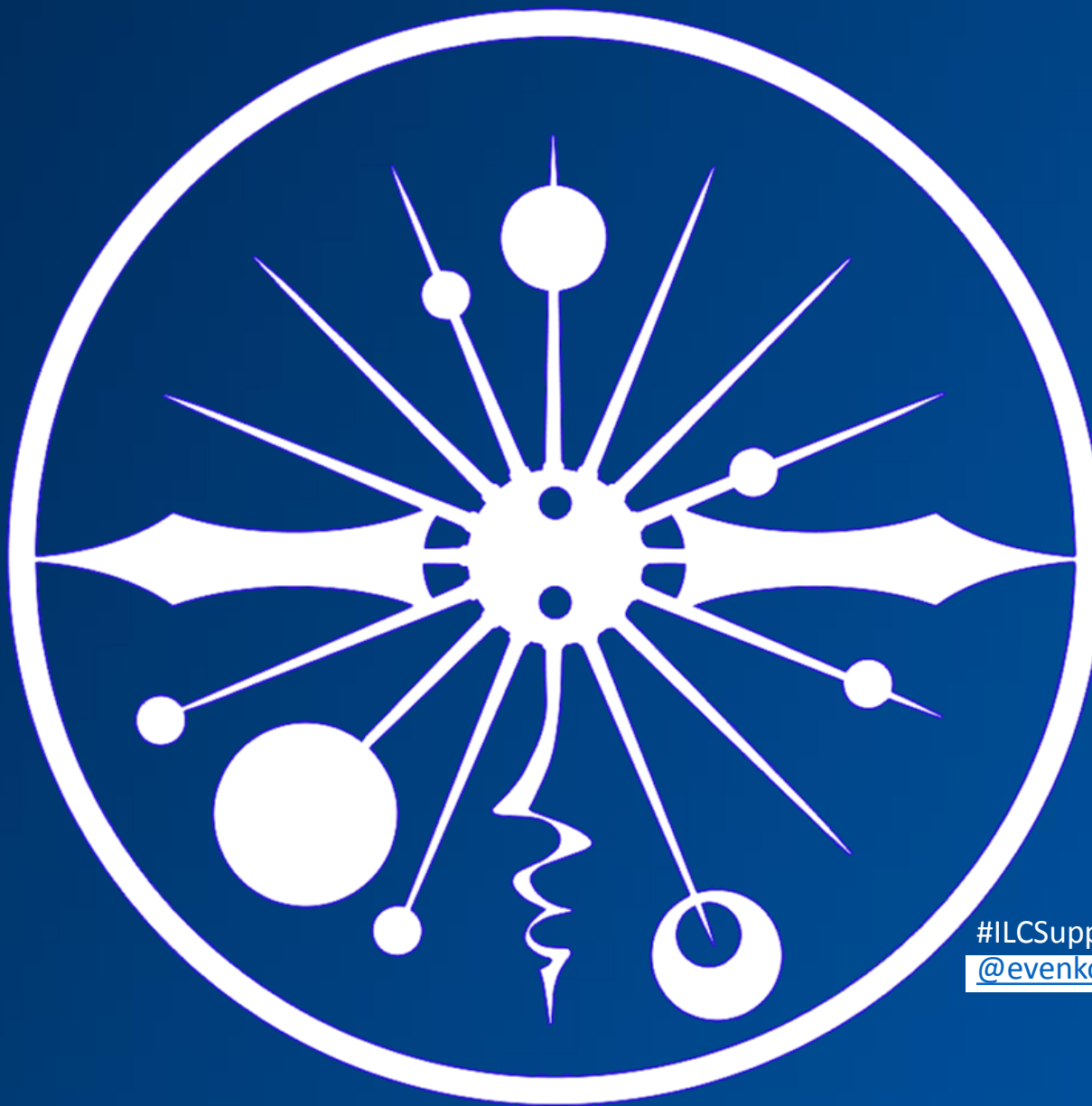
- Use BDSIM for tracking and interactions with beamline components
 - Have CDR MADX lattice for starting point
 - Have or can make GUINEA-PIG outputs at IP for beam distribution of 380 GeV machine
 - Both for perfect beamlines and perturbed
- If CDR lattice is inadequate at 380 GeV, try adjusting ILC lattice
- If adjusted ILC lattice is infeasible or inadequate, attempt redesign based upon CDR and/or L. Deacon version.

What are your thoughts?

If we are disconnected or you see this later...

- To reiterate, this is more of a request for input. I'm open to whatever advice or ideas you may have.
- I'm essentially learning all of this from scratch.
- There's a chance that we lose connection, you see these slides later, or you just don't feel like speaking up now.
 - In that case, please don't hesitate to email me. It actually might be preferable, since that way I can more easily ask follow up questions, etc...
 - The best email to reach me is ryan.bodenstein@cern.ch

Thanks!



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