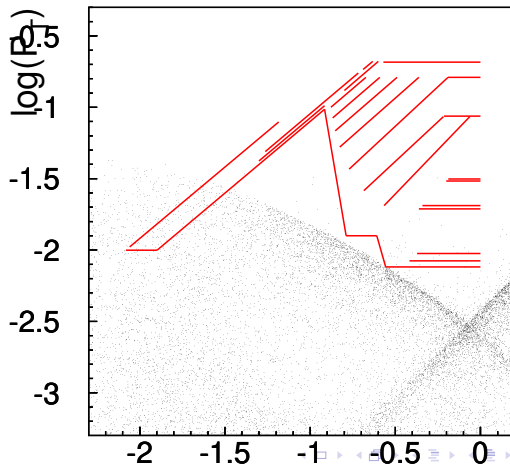


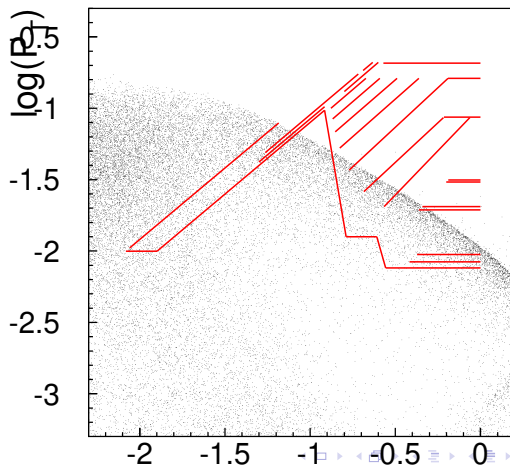
Pairs in HALHF with asymmetric E and asymmetric bunch-charge, $\sigma_z = 75\mu$

- Lumi: 0.83.
62k pairs, w/
706 TeV
- Power:
ILC $\times 1.25$
- Backward
- Forward



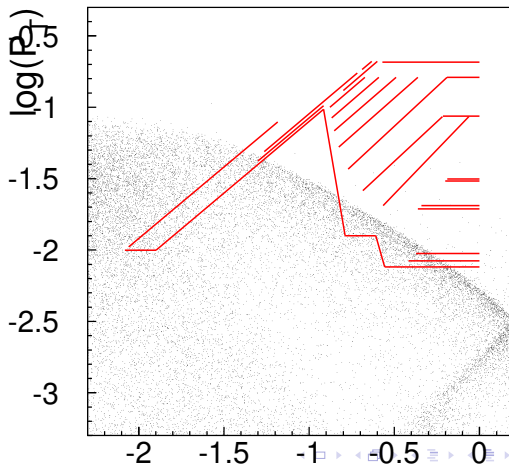
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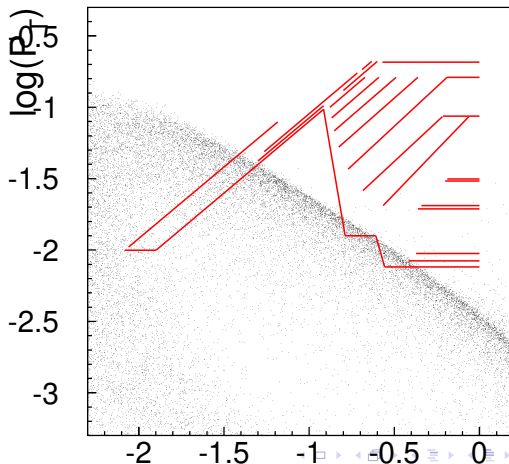
Pairs in HALHF with asymmetric E and symmetric bunch-charge, $\sigma_z = 75\mu$

- Lumi: 0.80.
52k pairs, w/
341 TeV
- Power:
ILC $\times$ 2.13
- Forward



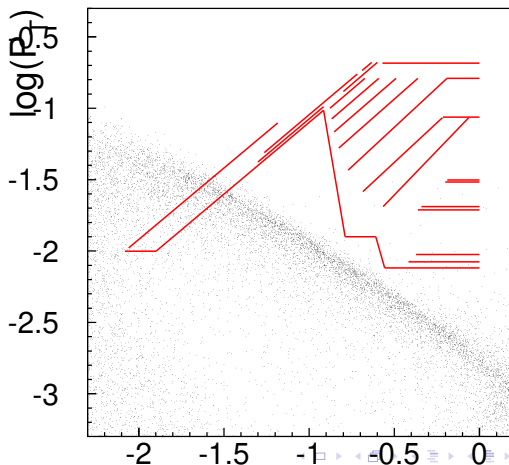
Pairs in HALHF with asymmetric E and asymmetric bunch-charge, $\sigma_z = 300\mu$

- Lumi: 0.70.
49k pairs, w/
277 TeV
- Power:
ILC $\times 1.25$
- Forward



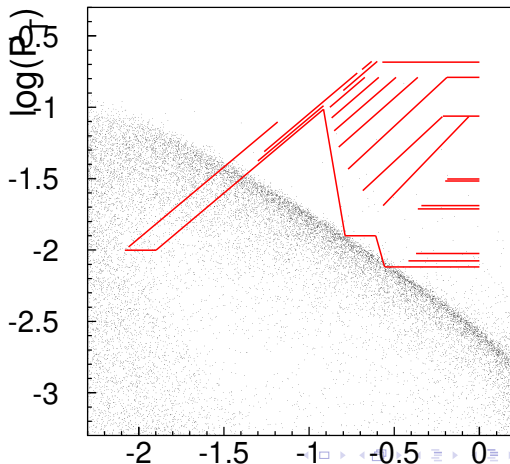
Pairs in HALHF with asymmetric E and symmetric bunch-charge, $\sigma_z = 300\mu$

- Lumi: 0.75.
48k pairs, w/
185 TeV
- Power:
ILC $\times$ 2.13
- Forward



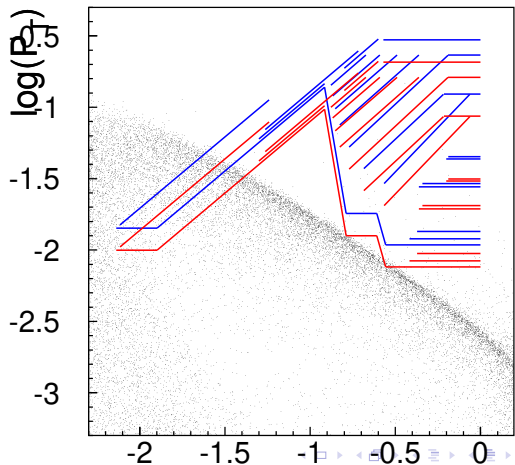
Pairs in HALHF with asymmetric E and modified asymmetric bunch-charge, $\sigma_z = 300\mu$

- Charges:
1.33/3
- Lumi: 0.71.
47k pairs, w/
215 TeV
- Power:
ILC $\times$ 1.52
- Forward,
3.5T
- Forward, 5T
- Forward, 5T,
longer



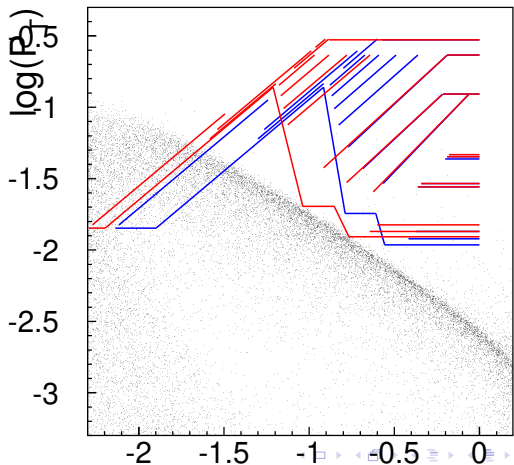
Pairs in HALHF with asymmetric E and modified asymmetric bunch-charge, $\sigma_z = 300\mu$

- Charges:
1.33/3
- Lumi: 0.71.
47k pairs, w/
215 TeV
- Power:
 $\text{ILC} \times 1.52$
- Forward, 3.5T
- Forward, 5T
- Forward, 5T, longer



Pairs in HALHF with asymmetric E and modified asymmetric bunch-charge, $\sigma_z = 300\mu$

- Charges:
1.33/3
- Lumi: 0.71.
47k pairs, w/
215 TeV
- Power:
ILC $\times$ 1.52
- Forward, 3.5T
- Forward, 5T
- Forward, 5T,
longer



So

- There is (still) no such thing as a free lunch.
- The **extent** of the pairs-cone
 - Does not depend on the energy-symmetry of the beams
 - But depends **a lot** on the bunch-charge - actually on the two bunch-charges individually, not on their asymmetry.
 - and depends **equally much** on the bunch-length.
- The bunch-charge and σ_z at ILC250-SetA are (probably) optimal, and were found by a feed-back loop between the machine and experimental experts.
- A somewhat less aggressive asymmetry of the bunch-charge, σ_z as ILC, and a detector B-field increased to 5 T allows (just) for doubling the barrel-length in the forward, and hence to recover some of the acceptance lost by the boost....

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