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ILC and PrX cryomodules

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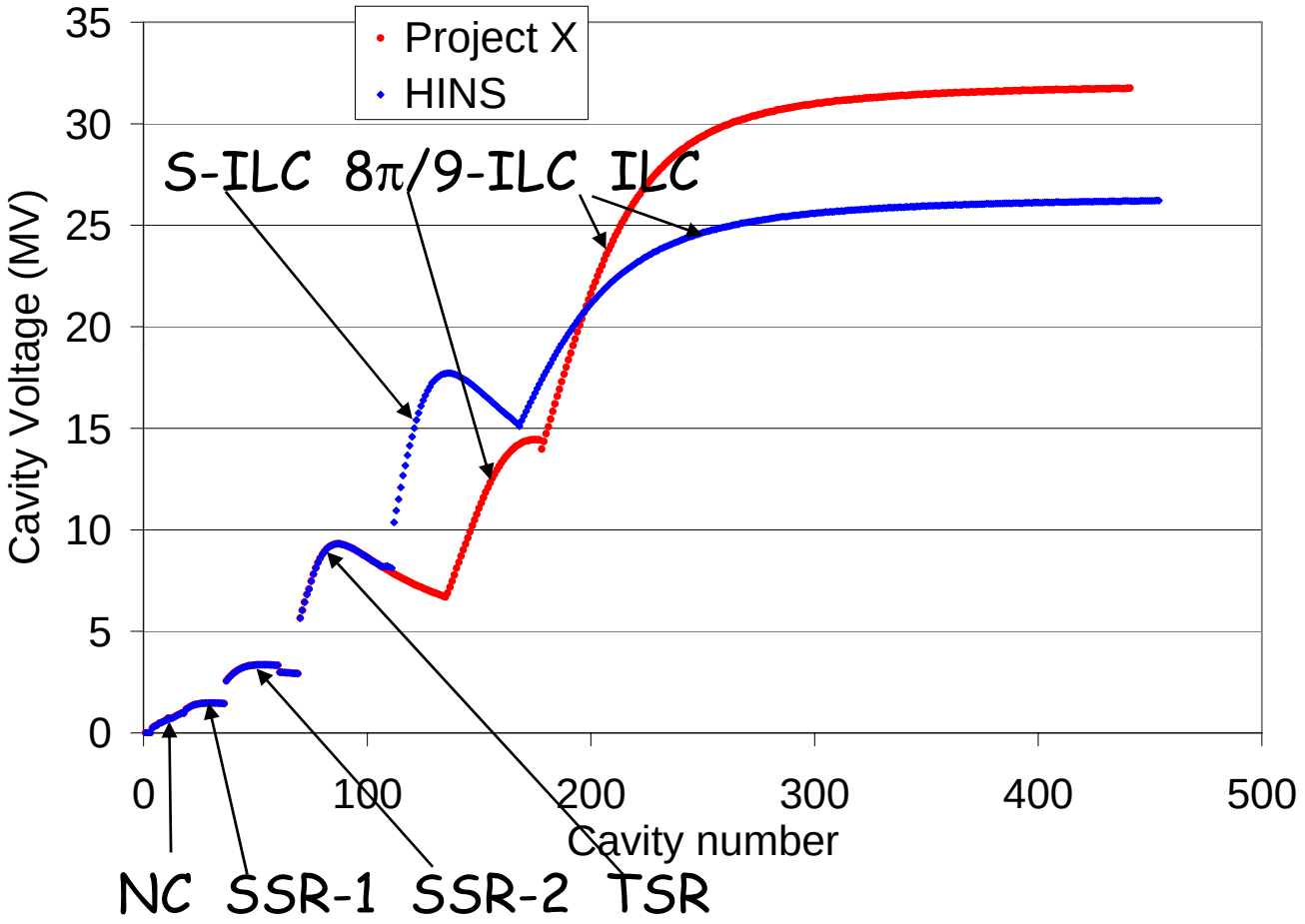
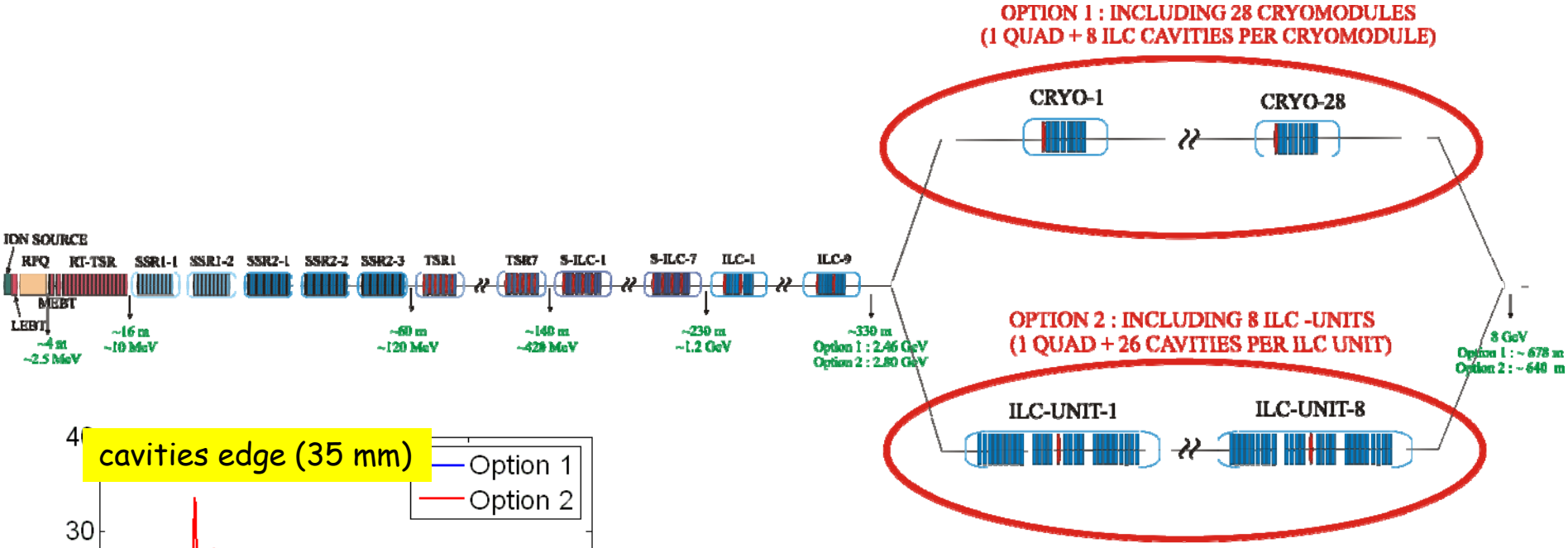
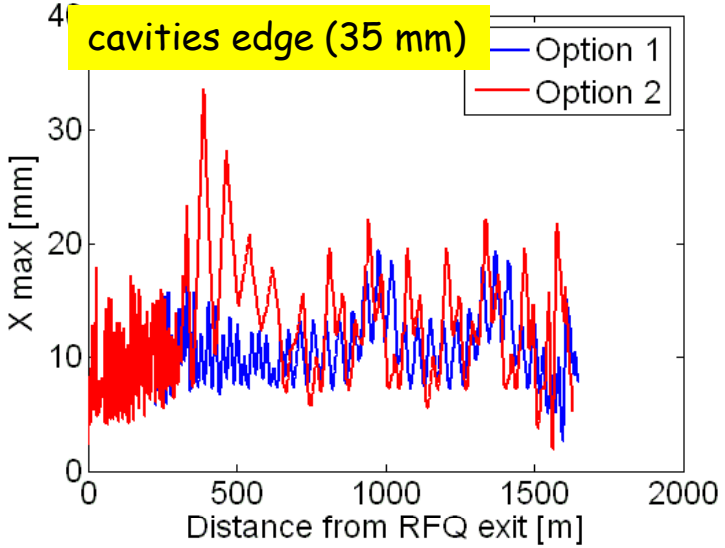
- Project X R&D has not started yet; what I am showing today is based on preliminary studies done for:
  - The Proton Driver (based on TESLA cryomodules with 26MV/m cavities);
  - Project X workshop in Nov 2007 (based on ILC cryomodules with 31.5MV/m cavities);
- Under any scenario Project X will need about 45 cryomodules (1.3-GHz)
- For all our PrX studies we have assumed Tesla-type cavities for the β = 1 section
- We have also looked at using TESLA-type cavities in a 8/9-π mode but (I believe) decided against it in favor of squeezed cavities optimized for beta of about 0.8.

Cavity voltage (HINS PD and Project X)



PD vs. PrX models





Option 2 has a potential problem with beam envelope being too large for the cavity iris because of quad spacing

Compatibility with ILC CMs

- It is likely that PrX will not use cryomodules with 9 cavities; it will have at least 1 quad per 8 cavities.
- We are discussing the possibility of making all cryomodules "ILC-like": 4cavities+1Quad+4cavites
  - This will require making a separate short cryostat for a Quad package (+correctors&BPM).
- It might be possible to use the same cryomodule package (4+1+4) also for the Squeezed-ILC section.
- I can not guarantee that the coupler spacing (and overall length) will remain the same as ILC T4CM.
- We have not yet looked at implications of various upgrade scenarios (3x current, 3x rep rate …)