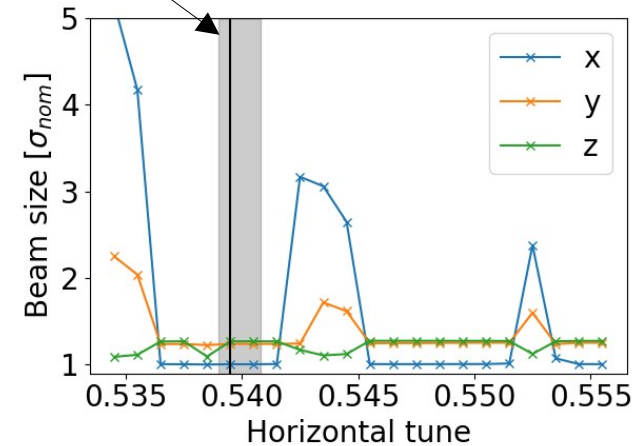


X-Z instability at Z with 120MV

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- Strong-strong simulations (XSuite) for $\frac{1}{4}$ machine using **K. Oide's "120MV"** parameter table and including longitudinal impedance show a large enough stable tune space in the horizontal plane

Horizontal tune (218.158/4) + Expected synchrotron tune spread (based on I. Karpov's estimations and multiplied by 4 due to sideband order, as pointed out by K. Oide)

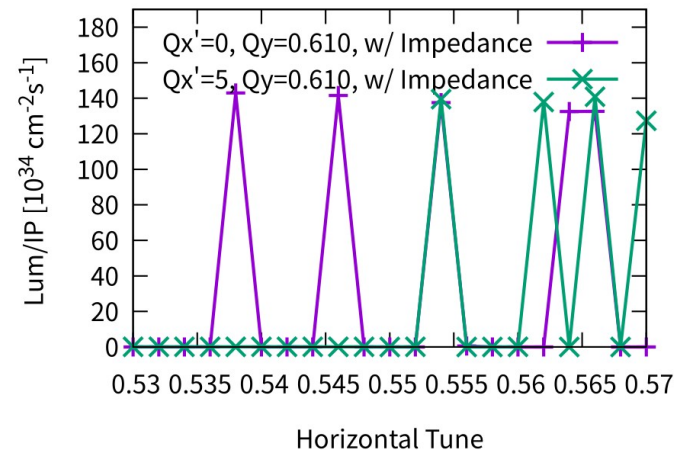
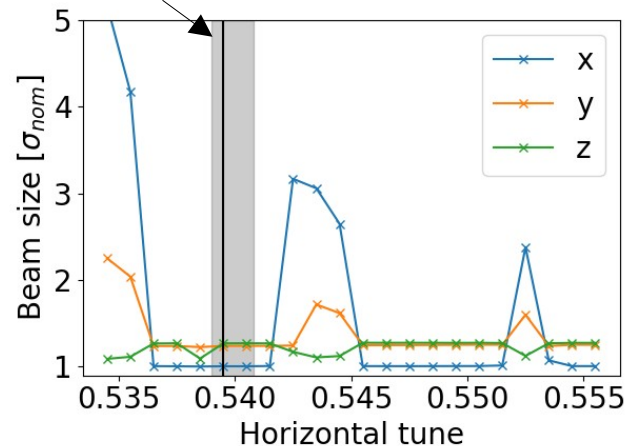


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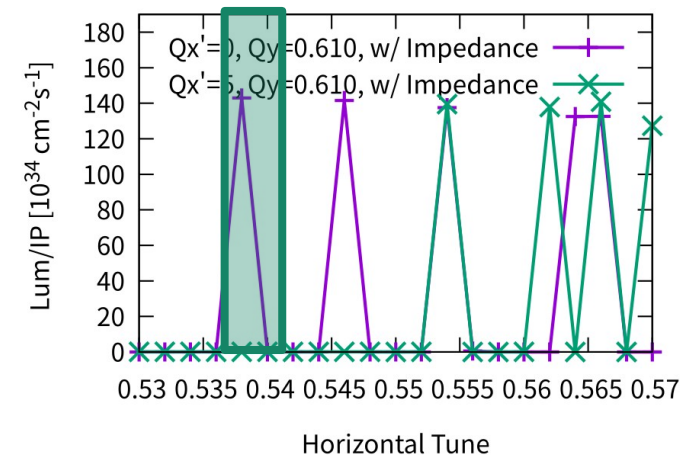
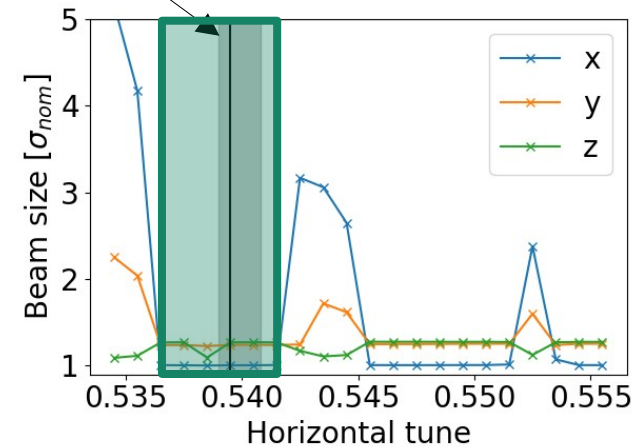


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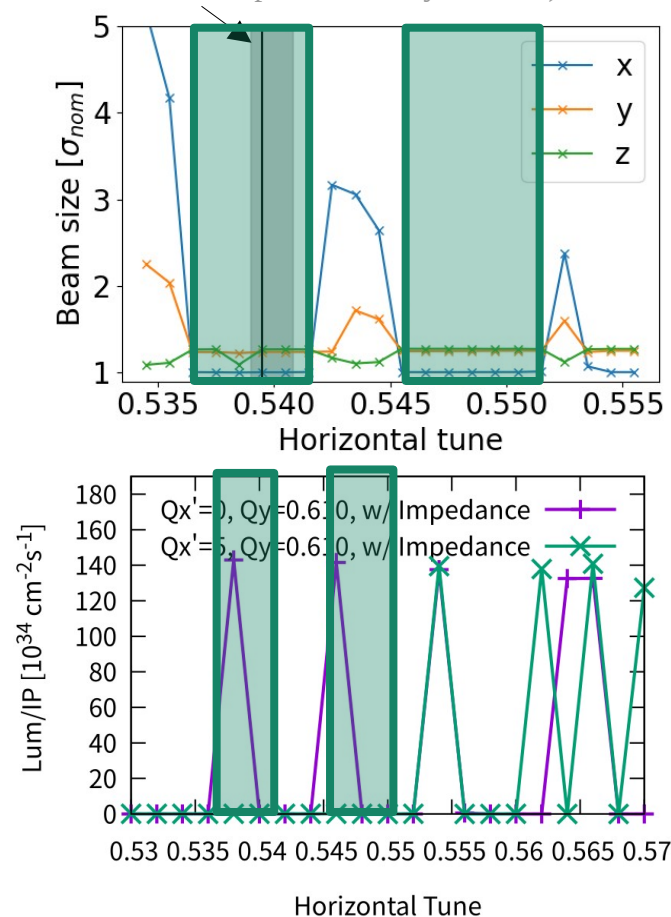


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 - No improvement with high chromaticity
- First tests with XSuite including transverse impedance as well seems to indicate that the difference is due to vertical instabilities (similar to those described in Y. Zhang @ IPAC23). If confirmed, the issue might not be linked to the higher voltage.

Horizontal tune (218.158/4) + Expected synchrotron tune spread (based on I. Karpov's estimations and multiplied by 4 due to sideband order, as pointed out by K. Oide)

