



DIPARTIMENTO DI SCIENZE DI BASE
E APPLICATE PER L'INGEGNERIA



Beam-beam with longitudinal impedance

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Yuan Zhang code: IBB

**PRAB 8,
074402 (2005)**

Simulation study of beam-beam effects

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**PRAB 23,
101003 (2020)**

Combined influence of beamstrahlung and coupling impedance on beam energy spread and length in future lepton colliders

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Self-consistent simulations of beam-beam interaction in future e^+e^- circular colliders including beamstrahlung and longitudinal coupling impedance

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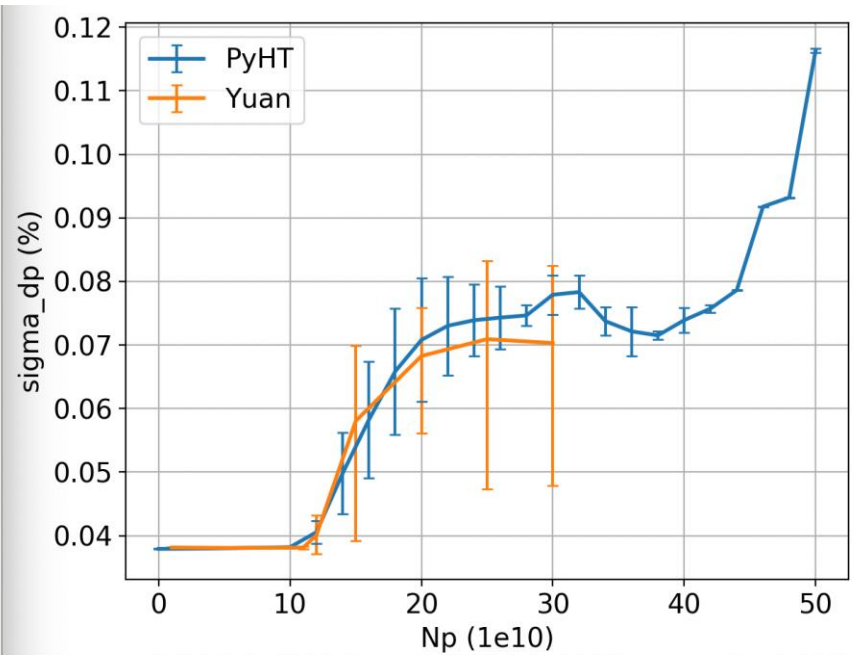
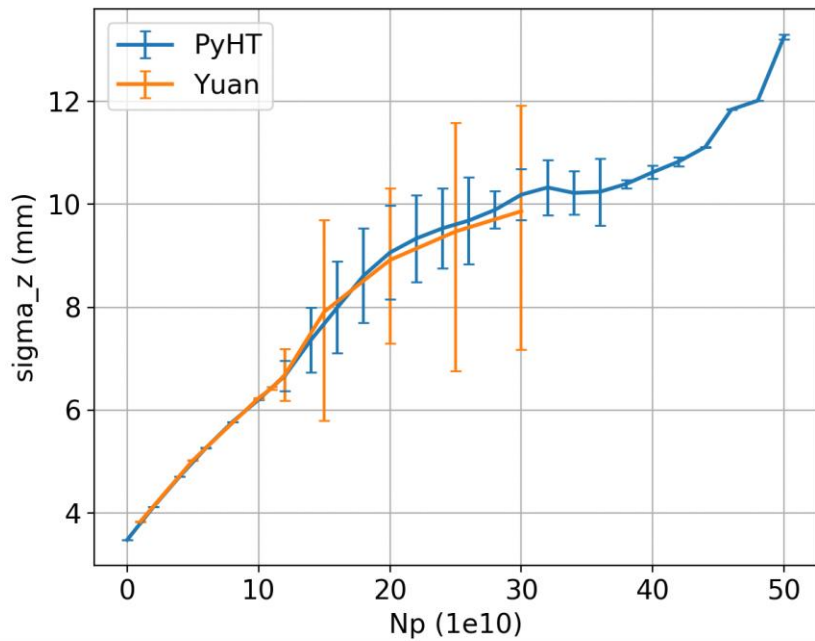
KEK, Tsukuba, Ibaraki 305-0801, Japan

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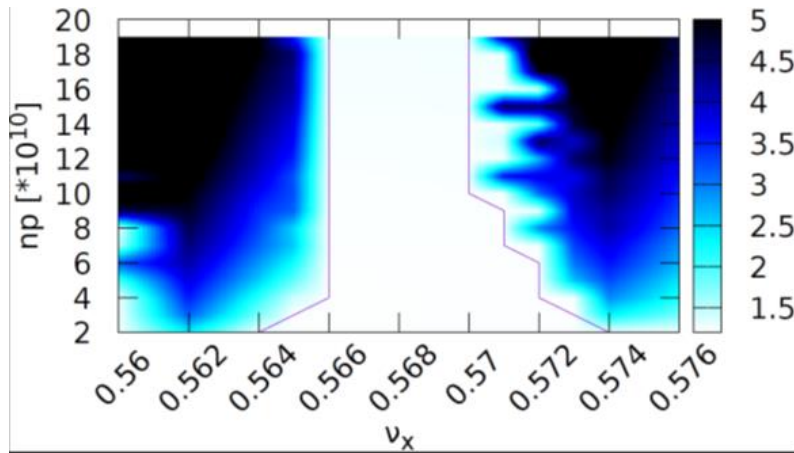
INFN-LNF, Frascati, 00044 Roma, Italy

**PRAB 23,
104402 (2020)**

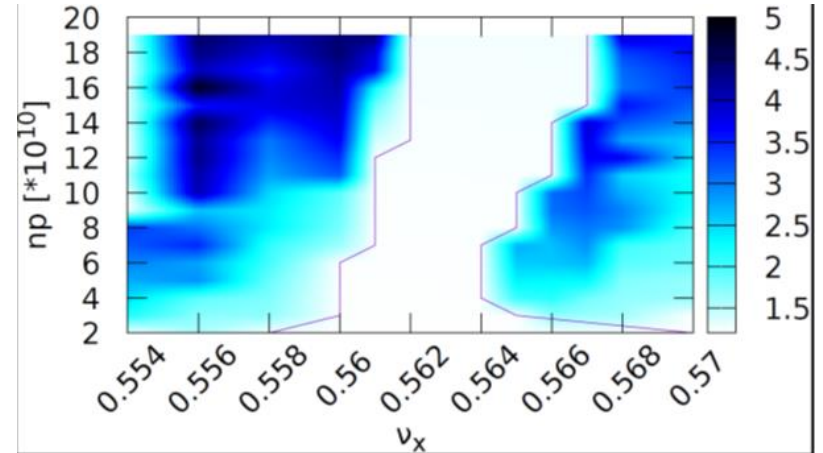
Comparisons between PyHEADTAIL and IBB



X-Z instability tune scan (blow-up of horizontal beam size)

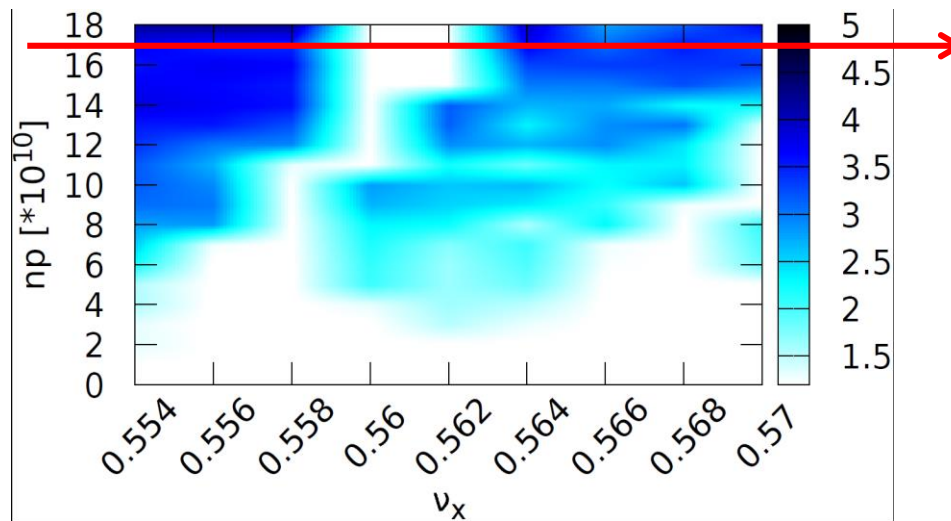


Without impedance

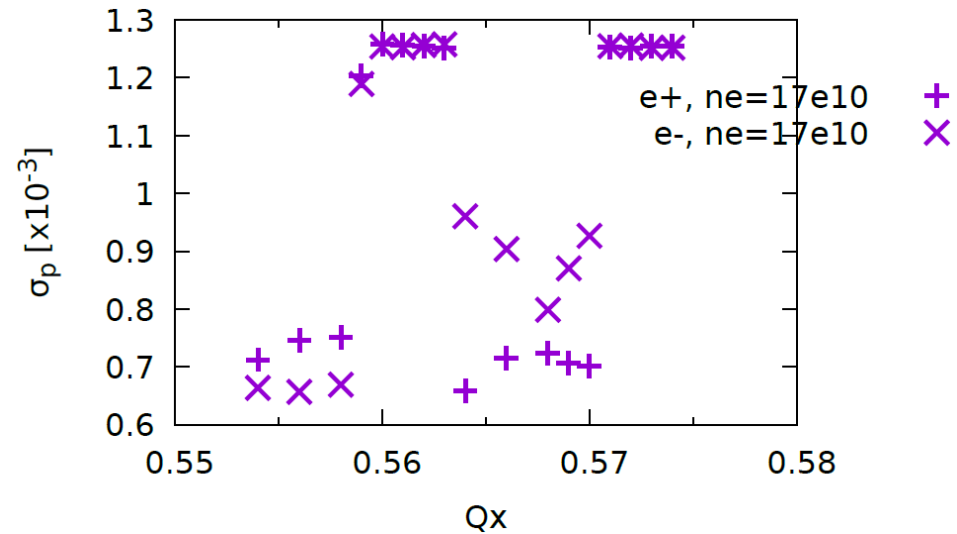
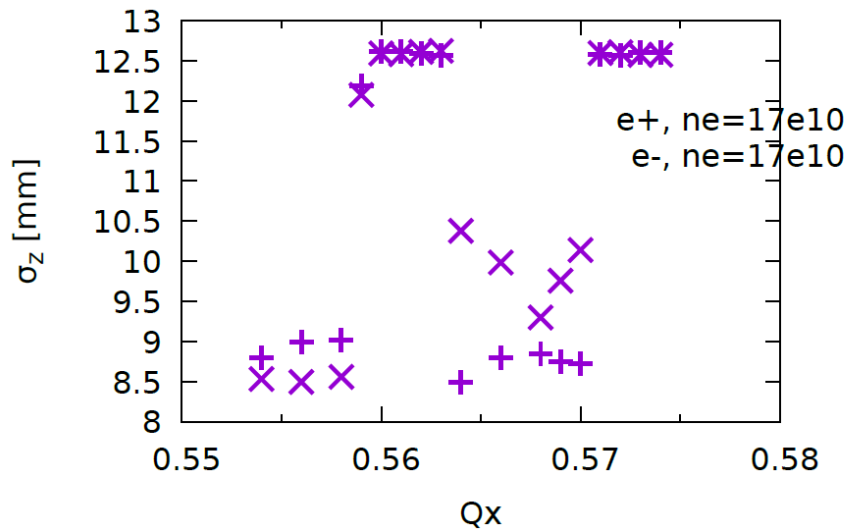


RW impedance

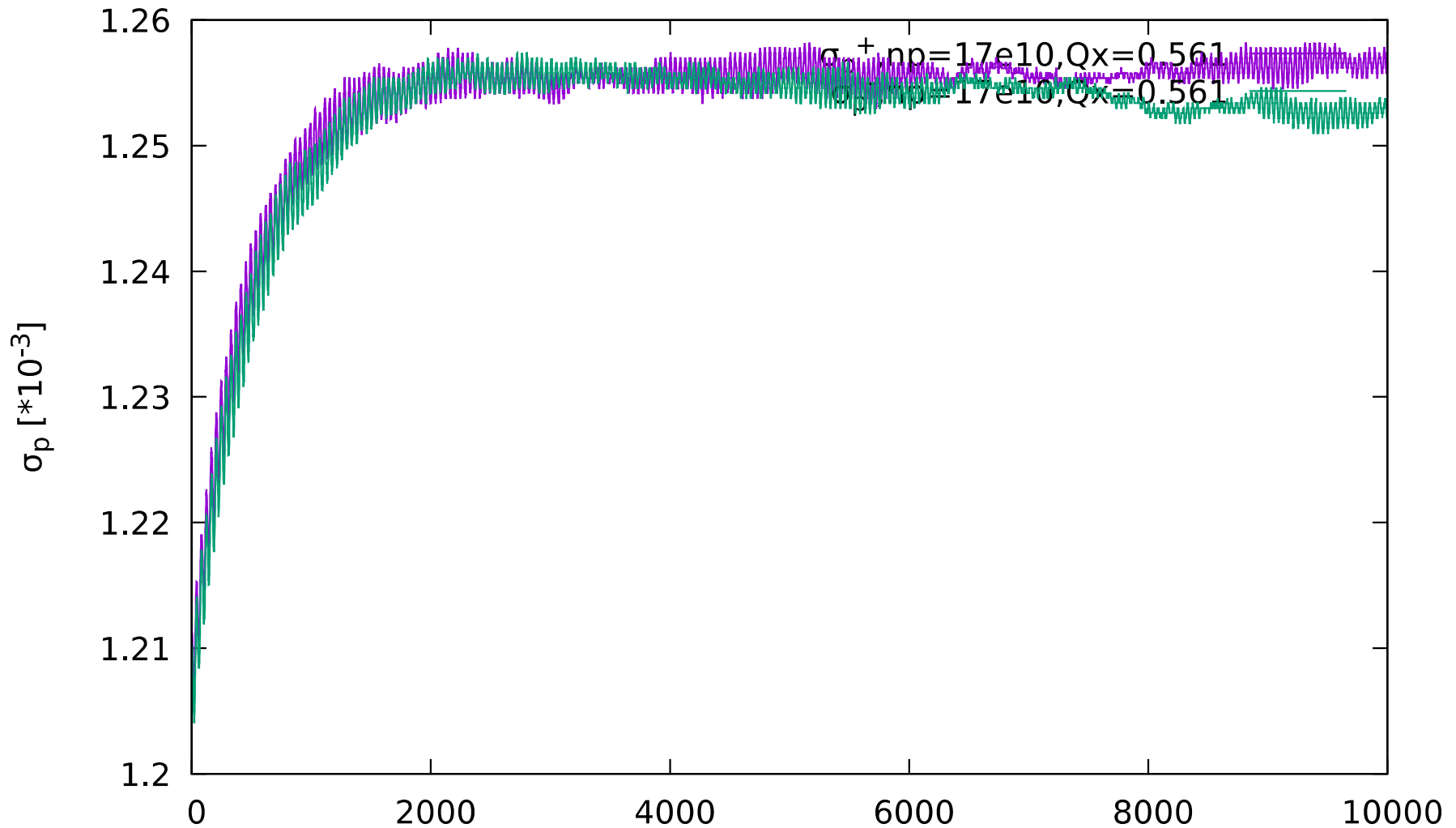
total impedance



SigmaZ & SigmaP versus Qx(Ne=17e10)



SigmaP versus turn (Ne=17e10, Qx=0.561)



SigmaZ & SigmaP versus Qx(Ne=10e10)

