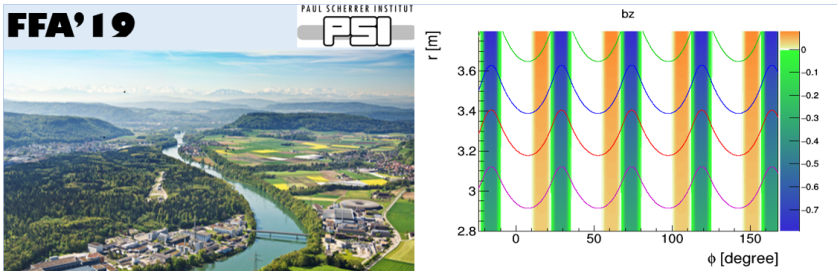

Contribution ID: **1** Type: **not specified**

Permanent Magnet VFFA for 18GeV Electron Acceleration

Tuesday, November 19, 2019 5:30 PM (45 minutes)

Fixed-field accelerators with vertical orbit excursion (VFFAs) have the interesting property that the matched beam orbit shape, circumference and optics stay constant with beam momentum. This requires magnets with a vertically exponential field $B_y = B_0 e^{ky}$ on the $x = 0$ midplane. This paper presents prototype measurements of such a magnet, along with a lattice using similar magnets that would allow acceleration of electrons to 18GeV in the RHIC tunnel. The lattice uses a high phase advance cell in order to give better magnetic efficiency while still being essentially a "scaling" FFA.

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Session Classification: Vertical FFA