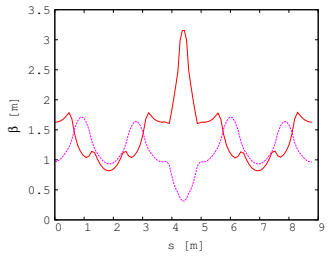

Figure 8: Horizontal (plain red) and vertical (dotted purple) beta-functions for half of the ring of the ERIT lattice.

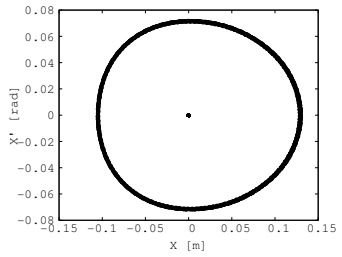

Figure 9: Horizontal phase space. An 11 MeV proton with an initial displacement of 13 cm is tracked in the ERIT lattice over 1000 turns.

rive at the same point. Another constraint comes from the reverse bend in the line. It induces to reverse the dispersion between the two bends, or to use a negative-k lattice in one of the bends. A schematic layout is presented in Fig. 10.

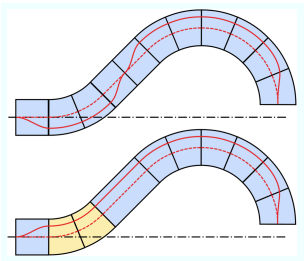

Figure 10: Schematic layout of a zero-chromatic FFAG gantry. The dotted red line represents the trajectory of a middle momentum, and the plain red line the maximum momentum. The mixed lines represents the rotation axis. The upper scheme shows the case of a reverse dispersion, the lower one the case of a negative-k lattice (in yellow).

SUMMARY

To overcome the problem of injection/extraction in the PRISM project, a new lattice using straight sections is proposed. An improvement of the ERIT scheme is then presented with a low-betafunction insertion in the ring. Finally the concept of a zero-chromatic FFAG carbon gantry is described. if these proposals need further studies, they open a promising way to improve lattices and schemes.

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