Longitudinal beta is given by[[1]](#footnote-1):



The bucket equation is given by[[2]](#footnote-2)



For coasting beam, this becomes[[3]](#footnote-3)



The required voltage will then be given by



1. From my USPAS Longitudinal Motion Lecture, <http://home.fnal.gov/~prebys/misc/uspas_2014/08-Longitudinal%20Motion%201.pptx>, p. 8 [↑](#footnote-ref-1)
2. ibid. p. 12 [↑](#footnote-ref-2)
3. You can also get this from Chao and Tigner, “Accelerator Physics”, 2.1.2, eq. 12, by plugging in =s=0 and rearranging some terms. [↑](#footnote-ref-3)