

Compensating the Unequal Bunch Spacing in the NLC Damping Rings*, K.L.F. BANE, P.B. WILSON, SLAC, K. KUBO, KEK - The damping rings of the Next Linear Collider (NLC) will be filled with four trains of 90 bunches, with a 60 ns gap between trains to allow for injection/extraction kicker rise and fall times. The existence of these gaps, however, leads to a 6 degree shift in synchronous phase from the head to the tail of each train. The resulting variation in longitudinal position (± 3 mm) needs to be compensated before the beam enters the linac, i.e. either in the ring itself or in the compressor section that follows it. In this report we investigate compensation methods that can be applied in the ring itself, such as adding lower harmonic cavities to the ring, following an idea by K. Kubo, et al, (presented at PAC93), or by optimally varying the amplitude or phase of the rf generator voltage.

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