Beam Loading Issues for SNS Storage Ring*,
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Neutron Source (SNS) storage ring, the machine cycle is
dominated by the multiturn injection. Therefore, the beam
loading issues are quite different from the conventional
beam loadings. The feedbacks, for instance a phase
feedback, are not straightforward to implement. Since the
beam loading factor is not very large, the beam instability
related with the beam loading is not of concern. Instead,
the evolution of the particle distribution under the beam
loading needs attentions. If not corrected, the beam loading
effect will lead to a beam to bucket mismatch in the
injection, causing beam leak into the interbunch gap. The
bunch leakage will increase the extraction beam loss, and
lower the e-p instability threshold. In this article, the
simulation of the SNS beam loading effect together with the
space charge effect will be presented. Same method has
been applied to the PSR, and shown the effect of beam
loading.