

SR-related Accelerator Physics Issues,
L. FARVACQUE, ESRF - Future Synchrotron
Radiation Sources should give further gains in
brilliance. All of the contributing factors must
therefore be reviewed and possibly upgraded:
emittances, beam current, insertion devices. Reducing
the emittances towards the diffraction limit
immediately raises the problem of ring size and
positional beam stability. An increase of the maximum
multibunch beam intensity (still rather conservative in
SR sources compared to other machines like B meson
factories) is linked to the correct treatment of HOMs.
Recently, there has been some interest in time structure:
up to which point can the bunch length in a Storage
Ring be reduced? Questions about single bunch
lengthening and stability should be addressed. Finally,
high brilliance, short bunches and high current are of
course in conflict with a good beam lifetime. Present
3rd Generation Light Sources may be used to explore
these limitations and outline perspectives for the 4th
generation.