The SLS Booster Synchrotron, C. GOUGH, G. IRMINGER, <u>W. JOHO</u>, L. SCHULZ, A. STREUN, V. VRANKOVIC, J.A. ZICHY, PSI - The full energy booster synchrotron for the Swiss Light Source (SLS) will be located in the same tunnel as the 2.4 GeV storage ring. This concept saves building and shielding costs. A FODO lattice with 3 dispersion-free straight sections produces a low emittance beam. The compact magnets can be cycled with a flexible ramping procedure up to 3 Hz, making top-up injection very attractive.