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Steady-State Microbunching and related activities at the Metrology Light Source

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Steady-State Microbunching (SSMB) has been proposed as a new mechanism to generate coherent synchrotron radiation at a storage ring facility with short wavelengths up to the EUV range. This promises a narrow band, high average power radiation source. A proof-of-principle experiment at the Metrology Light Source has shown the viability of the underlying mechanism. A summary of recent results from the ongoing experimental investigations is given, which includes the survival of microbunching for several revolutions. Relevant in the quasi-isochronous regime of SSMB, we also present work on nonlinear and local momentum compaction effects, limiting the shortest bunch lengths attainable.

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