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## APS upgrade booster commissioning

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After a long shutdown, the Advanced Photon Source (APS) booster synchrotron was recently re-commissioned for the APS Upgrade (APS-U) project. The APS-U requirements for the booster are more demanding than the old APS: much higher bunch charge, reduced beam emittance, and improved charge stability of better than 5% shot to shot. The booster accelerates electron bunches of 1-12 nC from 425 MeV to 6 GeV at a 1 Hz repetition rate. While the booster ring hardware was largely kept the same, it is now run on a separate RF source, which allows for frequency manipulation during the booster ramp. Photon diagnostics have recently been upgraded for reduced thermal drift. This paper will report on the booster re-commissioning process, including checkout of various systems, tests of the new RF source, and tuning for improved performance. It will also detail plans for further improvements, in particular for achieving even higher bunch charge.

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