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## **Burst mode pulse generation from fiber lasers for accelerator facilities**

*Wednesday 20 February 2013 16:30 (20 minutes)*

This talk will report on development of a burst-mode Yb-fiber amplifier, generating bursts of pulses with up to 500 MHz intra-burst repetition-rate and total burst energies of  $\sim 1$  mJ (e.g., 25 pulses of 40  $\mu$ J each). The pulses are compressible to  $\sim 1$  ps. All essential parameters of the amplifier are controllable using custom-developed FPGA-based electronics. The talk will summarize other relevant developments in our lab, including ultrafast material ablation experiments achieved with the burst-mode laser, the development of a 100-W, 5-ps fiber laser system, and a Cs atomic-locked Yb-fiber frequency comb, achieving excellent short ( $< 1$  s) and long-term ( $> 1$  s) timing jitter with potential applications to optical synchronization in accelerators.

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