Laserové centrum HiLASE Vás zve na seminář v anglickém jazyce:

Generation of 1 J bursts with picosecond pulses from Perla B thin-disk laser platform

Michal Chyla

HiLASE - RP1

In many fields of modern physics and industrial applications high-average power pulsed diode-pumped solid-state lasers operating at high repetition rates and delivering ultrashort pulses are essential. Scaling of these lasers towards higher pulse energies is often limited by the onset of thermal effects which are determined by the average power. In order to reach higher pulse energies one could decrease the repetition rate but too high pulse energies can be destructive for the used optics and it can induce nonlinear effects. The solution can be the burst pulse amplification.

Recent progress in the development of burst-mode lasers have led to raise of the burst duration to millisecond range, pulse energy up to 1 J per pulse in single shot systems and pulse durations below nanosecond.

At Hilase we would like to propose a way of increasing pulse energies by operating PERLA B laser system in 100 Hz burst mode with 1 ms burst duration and intra-burst repetition rate of 10 kHz. The CPA-based system incorporates fiber front-end, regenerative amplifier and the multipass amplifier followed by the booster amplifier. Pulses are stretched to >1.5 ns pulse duration and amplified to 10 mJ level per pulse in the regenerative amplifier. Multipass amplifier increases the burst pulse energy to 0.5 J level. After amplification pulses are compressed below 2 ps pulse duration. Recent progress of burst pulse operation of PERLA B laser system will be presented as well as a concept of a Joule-class burst operation with a booster amplifier.

Kdy: v úterý, **17. 04. 2018 od 10:00**

Kde: seminární místnost HiLASE

EUROPEAN UNION
European Structural and Investment Funds
Operational Programme Research, Development and Education

MINISTRY OF EDUCATION, YOUTH AND SPORTS

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 739573 (HiLASE CoE)

FZÚ

Science & Technology Facilities Council