L1 Allegra - brief description and expected parameter development

L1 Allegra (figure 1) is based on amplification of picosecond pulses in broadband OPCPA and compressed to <20 femtosecond using chirped mirrors. The pump lasers are based on Yb:YAG thin disk technology. For pump probe experiments part of the L1 beam can be split off the main beam and converted according to the needs of the user. The expected L1 parameters development and availability of user experiments are summarized in the table below.

Period	Compressed laser beam parameters	Laser time for experiments*)
User assisted commissioning experiments April 1 –August 30, 2019	>20 mJ / <20 fs / 1kHz	12 weeks 100 % L1 Allegra availability in for user assisted commissioning experiments of the HHG beamline and MAC and ELIps end stations

100% laser availability means 8 h per day, 5 days per week.

Figure 1: L1 Allegra laser.

Support lasers

For initial methods development and for future support for the L1 laser two support lasers are available.

Coherent Astrella

	Energy - compressed	Pulse duration At target	Repetition rate
Coherent Astrella	6 mJ	<40 fs	1 kHz

Femtolaser Femtopower

	Energy - compressed	Pulse duration At target	Repetition rate
Femtopower	4.5 mJ	<30 fs	1 kHz

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European Structural and Investing Funds
Operational Programme Research,
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