

Installation of a THz beamline for machine studies and operation @ SOLEIL

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Two beamlines dedicated to users experiments in the infrared to THz range are presently in operation at SOLEIL: AILES and SMIS. A new “short” beamline in the THz range has been installed for machine studies and operation at SOLEIL. It consists, as on the previous beamlines, of a copper slotted mirror which can be inserted in one of SOLEIL’s dipole fan to extract radiation from visible to THz range. A toroidal together with a flat mirror, both made of aluminium, enable to transport the radiation to a small diagnostics station located inside the ring tunnel. The radiation focussing was optimized to obtain a small spot size on the diamond window ensuring the vacuum to air transition. A fast THz diode is implemented on the diagnostics station to monitor the coherent THz radiation intensity, which is emitted in given conditions. This diagnostic will be used for the survey of the femtoslicing experiments and for machine studies at high current per bunch. We present here the installation and first commissioning results of this THz beamline.

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