CompactLight Complementary Use and Opportunities

Report of Contributions

https://indico.cern.ch/e/1088510

Contribution ID: **1** Type: **not specified**

Welcome and introduction

Monday, 8 November 2021 14:00 (15 minutes)

Presenter: D'AURIA, Gerardo (Elettra Trieste)

Contribution ID: **2** Type: **not specified**

X-ray phase contrast CT - moving closer to clinical implementation: recent experiences and planned activities at the IMBL

Monday, 8 November 2021 14:15 (20 minutes)

Presenter: BRENNAN, Patrick

Contribution ID: **3** Type: **not specified**

Multiscale phase contrast imaging in biomedical research: the experience at Elettra - Part I

Monday, 8 November 2021 14:40 (20 minutes)

Primary author: DULLIN, Cristian

Presenter: DULLIN, Cristian

Contribution ID: **4** Type: **not specified**

Potential biomedical imaging with ICS sources - prospects for dual-energy applications

Monday, 8 November 2021 15:20 (20 minutes)

Presenter: CARDARELLI, Paolo

Contribution ID: **5** Type: **not specified**

ICS system application for semiconductors wafer inspection

Monday, 8 November 2021 15:45 (20 minutes)

Presenter: DE KLERK, Jos (VDL ETG)

Contribution ID: **6** Type: **not specified**

High gradient accelerators, electromagnetic undulators and Compact light sources

Monday, 8 November 2021 16:25 (20 minutes)

Presenter: DATTOLI, Giuseppe (ENEA, Frascati, Roma)

Contribution ID: **7** Type: **not specified**

ICS studies at CERN

Monday, 8 November 2021 16:50 (20 minutes)

Two high-current injectors were considered for ICS use, together with a short X-band linac. The first injector is based on the CompactLight technology, while the second is based on a design from CERN. The pulse energy of a 1 kW laser was increased by using a Fabry-Pérot cavity. To perform these studies, an ICS simulation module was developed within the particle tracking code RF-Track. A benchmark of flux and brilliance calculations against CAIN was performed. Runtime comparisons proved RF-Track to be orders of magnitude faster than CAIN. Given the two setups, the ICS simulations showed MeV x-rays with flux values in the order of 10ˆ12 to 10ˆ13 photons/sec. The resulting high intensity and high energy x-rays allow for various applications, including cancer therapy, tomography, and nuclear waste management.

Presenter: MUSAT, Vlad (University Politehnica of Bucharest (RO))

Contribution ID: **8** Type: **not specified**

Optical cavities for ICS

Monday, 8 November 2021 17:15 (20 minutes)

Presenter: MARTENS, Aurelien (Université Paris-Saclay (FR))

Contribution ID: **9** Type: **not specified**

Burst mode high-power ps pulses at GHz repetition rates

Monday, 8 November 2021 17:40 (20 minutes)

The aim of kW-flexiburst is to develop a high-power Ultra-short Pulse (USP) laser generating bursts that can be arbitrarily adjusted in terms of burst repetition rate, intra-burst repetition rate, number of pulses per burst, relative intensities in the burst while maintaining a 1 kW average power. This will be enabled by a radically new concept of seed oscillator, which offers the opportunity to work at GHz repetition rates.

Presenter: CORMIER, Eric (Laboratoire Photonique, Numérique et Nanosciences (LP2N))

Contribution ID: **10** Type: **not specified**

The Munich Compact Light Source

Tuesday, 9 November 2021 14:00 (20 minutes)

Presenter: DIEROLF, Martin (Technische Universität München)

Contribution ID: **11** Type: **not specified**

The ThomX project status

Tuesday, 9 November 2021 14:25 (20 minutes)

Presenter: MONARD, Hugues

Contribution ID: **12** Type: **not specified**

The STAR Infrastructure

Tuesday, 9 November 2021 14:50 (20 minutes)

Presenter: AGOSTINO, Raffaele

Contribution ID: **13** Type: **not specified**

Smart*Light: a compact hard X-ray ICS source based on X-band acceleration

Tuesday, 9 November 2021 16:45 (20 minutes)

Presenter: LUITEN, Otger Jan

Contribution ID: **14** Type: **not specified**

Very Compact Inverse Compton Scattering Gamma-ray Source at Tsinghua University

Tuesday, 9 November 2021 15:40 (20 minutes)

Presenter: SHI, Jiaru

Contribution ID: **15** Type: **not specified**

BoCXS: An ICS-Based Multipurpose Compact X-ray Source

Tuesday, 9 November 2021 16:20 (20 minutes)

Presenter: PLACIDI, Massimo

Contribution ID: **16** Type: **not specified**

Towards Ångström Laser @ FREIA

Tuesday, 9 November 2021 15:15 (20 minutes)

Presenter: GORYASHKO, Vitaliy (Uppsala University)

Contribution ID: **17** Type: **not specified**

EuPRAXIA@SPARC_LAB: An X-band linac as driver for plasma acceleration

Tuesday, 9 November 2021 17:10 (20 minutes)

Presenter: FERRARIO, Massimo

Contribution ID: **18** Type: **not specified**

The CHUV-CERN collaboration on a high-energy electron FLASH therapy facility

Tuesday, 9 November 2021 17:35 (20 minutes)

A very hot topic in radiation oncology is so-called FLASH therapy which involves delivering an entire radiation treatment in a few hundred ms, or less. This fast delivery can reduce toxicity to healthy tissue while maintaining tumor control expanding the parameter space for treatment. The effect has been observed in experiments and clinical translation is now underway. As part of this effort, Lausanne Hospital (CHUV) and CERN have formed a collaboration to design and build a clinical FLASH-capable facility for treatment of large, deep-seated tumors using high-energy, 100 MeV-range, electrons accelerated with electron linac technology developed by the CLIC linear collider study.

Presenter: WUENSCH, Walter (CERN)

Contribution ID: **19** Type: **not specified**

Development of C-band electron linacs for FLASH-RT at La Sapienza University & INFN

Tuesday, 9 November 2021 18:00 (20 minutes)

Presenter: PALUMBO, Luigi (Università di Roma La Sapienza)

Contribution ID: **20** Type: **not specified**

Multiscale phase contrast imaging in biomedical research: the experience at Elettra - Part II

Monday, 8 November 2021 15:00 (15 minutes)

Primary author: TROMBA, Giuliana (Elettra)

Presenter: TROMBA, Giuliana (Elettra)