

Welcome to LIDINE 2022

Marcin Kuźniak













This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 952480



Welcome to Warsaw

- Thank you for coming, despite difficult times...
- Uniqueness of LIDINE: the spirit of collective brainstorming and open-minded knowledge sharing across experiments and fields
- Get involved in discussions, ask questions, share your ideas, inventions and experiences
- Initiate new collaborations

 We hope you enjoy your time here! Best if you can stay a couple of days longer to explore the city

AstroCeNT / NCAC PAS

AstroCeNT, www.astrocent.camk.edu.pl

- International Research Agenda Programme of the Foundation for Polish Science (European Regional Development Fund)
- Autonomous department of the Nicolaus Copernicus Astronomical Center of the Polish Academy of Sciences (NCAC PAS)
- Located at the Warsaw University of Technology Campus downtown

NCAC PAS, www.camk.edu.pl

- >100 active researchers (mainly astronomy and gravitational waves)
- Grad school

Funding:

- 38 MPLN (8.3 MEuro) for 5 years (until the end of 2023)
- 0.9 MEur from Horizon 2020 Twinning until October 2023 (DarkWave)



ASTROCENT





AstroCeNT profile

Team I
SiPM Systems for Astroparticle
Physics and Medical Physics
(leader: Marcin Kuźniak)

Team II
Seismic sensors
for gravitational waves
(leader: Tomasz Bulik)

Team III
Electronics and Data
Acquisition and Processing
(leader: Mariusz Suchenek)

Team IV
Ultrapure SiPMs and
Associated Readout Electronics
(leader: Masayuki Wada)

Team V
Scientific Computing and
Information Technology
(leader: Piotr Gawron)

Team VI
Particle astrophysics
(leader: Leszek Roszkowski)

Main objectives:

- Studies of the invisible Universe (gravitational waves, dark matter, neutrinos)
- Ultra-sensitive instruments to detect extremely faint signals
- Seismic sensors, modules of silicon photomultipliers (SiPMs)
- Big data collection and processing, quantum computing
- Applications in industry and medicine (e.g., PET)

Projects and partners

Main international collaborations:

- DarkSide-20k, DEAP-3600
- Global Argon Dark Matter Collaboration (ARGO)
- Advanced VIRGO/LIGO, Einstein Telescope
- Hyper-Kamiokande
- KM3Net

Key partners include:

- APC / CNRS
- European Gravitational Observatory
- Princeton University
- Gran Sasso Science Institute
- Warsaw University of Technology
- National Centre for Nuclear Research
- McDonald Institute
- SNOLAB
- CERN Neutrino Platform

DarkWave project (Horizon 2020 Twinning) and consortium coordinated by NCAC PAS:









DarkWave project

Main objectives:

- Direct dark matter detection:
 - DarkSide-20k construction
 - Technologies for future detectors (radiopure SiPMs, integrated electronics and digital readout SiPMs)
 - Scale-up of light collection schemes (wavelength shifters)
- Synergies with other physics areas:
 - Neutrino detectors (wavelength shifters)
 - Gravitational wave detection (seismic sensors)
 - Neutrinoless double beta decay (isotopic enrichment)

Support for this conference:

- 7 travel grants for international students
- Rental, promotional and admin costs



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LIDINE 2022 highlights

- First public presentation of the recent DarkSide-50 results (Masato Kimura's talk)
- Dedicated session on light yield stability in large detectors (chair: Andrzej Szelc)
- Announcement from the ECFA noble liquid detector working group (new in the schedule)
- Best poster competition for students
- Round table discussions:
 - New technologies, ideas, R&D priorities (Vicente Pesudo)
 - Scale up challenges (Andrii Terliuk)
- Chance to finally interact in person ...

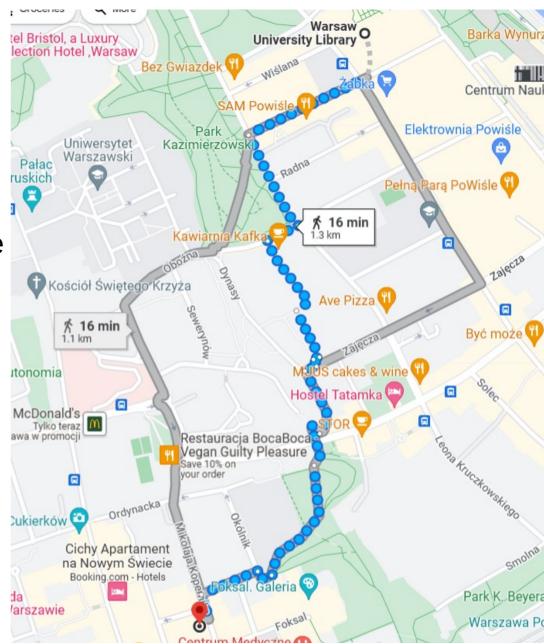
Welcome reception

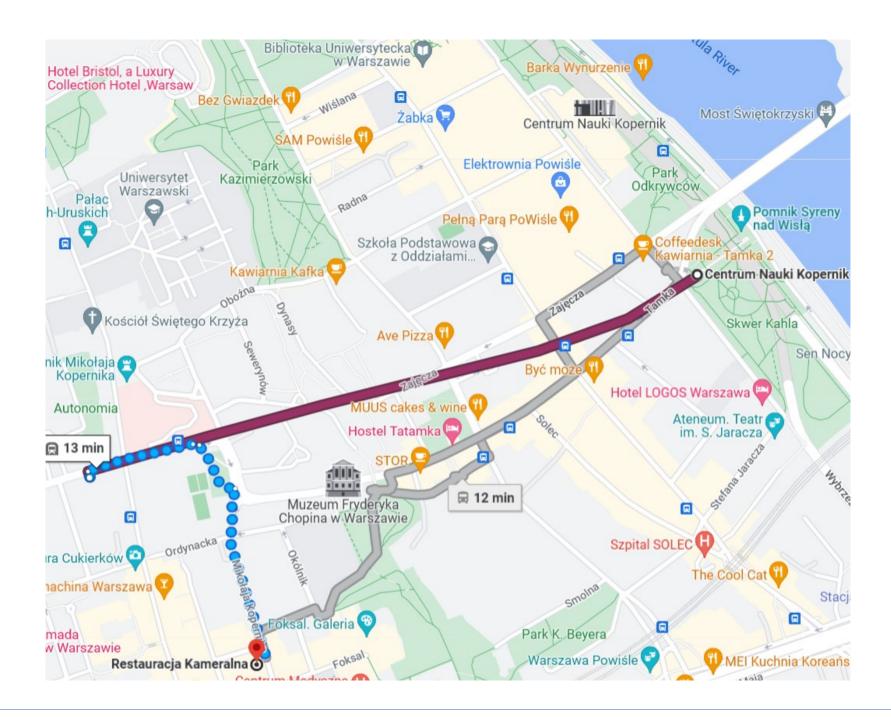
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At Przystan Nowa Fala. Starting today at 5:30pm, shortly after the last session.

Conference dinner

- Kameralna Restaurant, ul.Kopernika 3
- At 7 pm, tomorrow
- Access:
 - ~15-20 minutes walking distance (scenic!)
 - Accessible also via public transit (this Thursday public transit in Warsaw is free!)





Alternatively, short walk from subway "Nowy Świat-Uniwersytet"

Acknowledgements

Sponsorship:



Patronage:



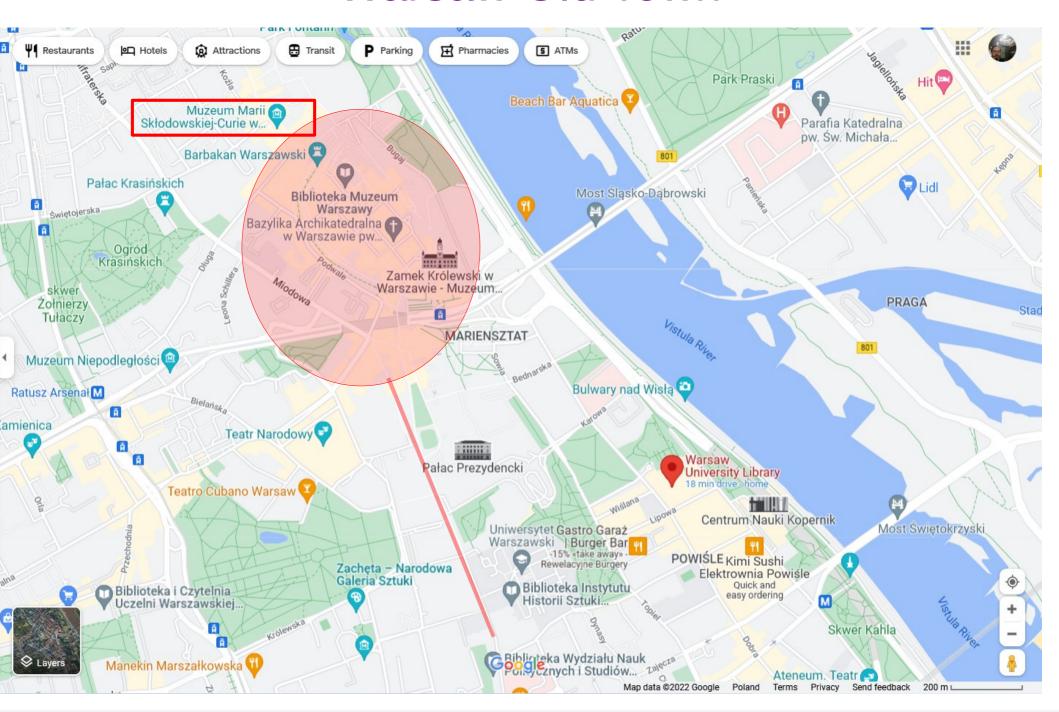
Nearby attractions

Rooftop gardens



Chopin museum

Warsaw Old Town



Thank you!

