

Departament Aparatury i Technik Jądrowych DTJ - seminarium stacjonarne

lokalizacja: **PNT (sala Maria)**
termin: **27.02.2023r. godz. 11.00**

"Applied Nuclear Physics at the Intersection of Science, Technologies, and Society"

Kai Vetter

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The events at the Fukushima Dai-ichi Nuclear Power Station (FDNPS) more than 10 years ago remind us about the importance to develop enhanced and smarter radiation detection and mapping technologies to prevent and to better respond to such events and to support the decontamination, decommissioning, and the remediation of nuclear facilities and their environments. In addition to technological advancements, we also have to recognize the need to engage with communities and society more broadly to establish trusted scientific resources that citizens and media can refer to in order to minimize the detrimental impact driven by misperception of and misinformation about radiation. In our Berkeley Applied Nuclear Physics Program we combine research and training of the next generation of students with a wide range of activities to engage with schools and communities utilizing the unique opportunities provided by UC Berkeley and LBNL and to serve as a trusted scientific resource. In my talk, I'll discuss some of our outreach activities and our development of advanced radiation detection and imaging systems and the fusion with contextual sensors that can be deployed on unmanned system to create radiological maps in 3D in real time to prevent, prepare, and better respond to FDNPS type events now and in the future.

Biosketch:

Kai Vetter is Professor, Vice Chair, and Head Graduate Advisor in the Department of Nuclear Engineering at the University of California, Berkeley; He holds a joint position as Faculty Senior Scientist and Head of the Applied Nuclear Physics program at the Lawrence Berkeley National Laboratory and is co-founder of Gamma-Reality Inc. He obtained his Ph.D. in Nuclear Physics at the University of Frankfurt in Germany. Professor Vetter's main research interests are in the development and demonstration of new concepts and technologies in radiation detection to address some of the outstanding challenges in fundamental sciences, nuclear security and safety, and health. He leads and oversees a wide range of developments in radiation detection and imaging and the fusion of nuclear with complementary data that are relevant for example in the mapping of contamination in Fukushima or the verification of ion-cancer therapy. He is director of the Institute for Resilient Communities that was established in 2015 to address the need to better integrate advancements in sciences and technologies with communities locally and globally. Prof. Vetter initiated and still oversees the Berkeley Radwatch and DoseNet programs with the goal to engage the next generation in performing environmental measurements employing fundamental science and engineering concepts and to expand across regions, nations, and cultures. He has authored and co-authored more than 200 publications in peer-reviewed journals and is fellow of the American



Physical Society. He received Presidential Citations from the American Nuclear Society twice, for his engagement in Fukushima through measurements and enhancing community resilience.