

2nd European Advanced Accelerator Concepts workshop

Supported by EU via EuCARD-2, GA 312453

13-19 September 2015, La Biodola - Isola d'Elba - Italy



Computations for Accelerator Physics Advanced beam diagnostics for beams and plasma

Novel schemes using advanced technologies (table-top FEL, plasma linear collider, ...)

High gradient and multibunch acceleration in metallic structures
(C-X-band and beyond) with innovative power generation schemes

Dielectric structures and other novel technologies

Plasma accelerators driven by electron beams

Plasma accelerators driven by modern lasers

Plasma accelerators driven by proton beams

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Lunedì 14



22
26

Martedì 15



21
26

Mercoledì 16



22
27

Giovedì 17



23
28

Venerdì 18



21
28

Sabato



- Many thanks to all the people who have accepted to share the room due to overbooking
- If you like to have dinner at your own hotel please contact your hotel reception desk at breakfast time



COFFEE

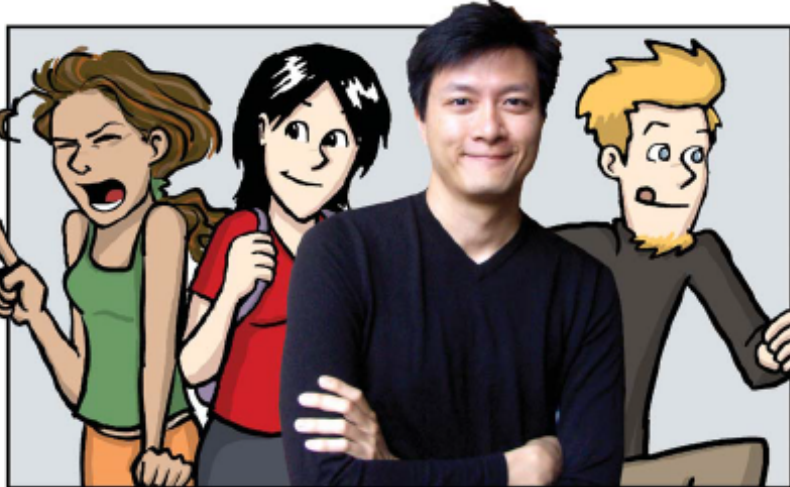
**LUNCH
DINNER?**

DISCUSSIONS

DINNER?

Wave Breaking

Monday, Sept 14			Tuesday, Sept 15			Wednesday, Sept 16			Thursday, Sept 17			Friday, Sept 18		
Invited Talks			Invited Talks			Invited Talks			Invited Talks			Invited Talks		
08:30	Welcome (M. Ferrario-INFN) The prospects of advanced accelerator R&D in Europe Ralph Assmann - DESY	15' 25'	Dielectric laser acceleration: results and perspective Joel England - SLAC	40'	Ion acceleration from ultra thin foils Paul McKenna - Strathclyde	40'	Overview on advanced diagnostics for High Brightness Beams Alessandro Cianchi - INFN - Univ. Roma Tor Vergata	40'	Review on Betatron/Compton sources Kim Ta Phuoc - LOA	40'				
09:10	Prospects for Advanced Accelerator R in the US: Perspectives on the HEPAP Accelerator R Sub-panel Report James Rosenzweig - UCLA	40'	THz-based acceleration Franz Kaertner - DESY	40'	Laser interaction with nearly overdense gas targets for ion acceleration Alessandro Flacco - LOA	40'	Optical probing of a laser-driven electron accelerator Alexander Sävert - Jena	40'	Ultra-high brilliance γ ray beams generation Gianluca Sarri - Queen's University of Belfast	40'				
09:50	Overview of Advanced Accelerator Development in Asia Wei Lu - Tsinghua	40'	High gradient, X-band and above, metallic RF structures Valery Dolgashev - SLAC	40'	LIGHT project: a bridge lab for ion acceleration Vincent Bagnoud - GSI, HI Jena	40'	Matching beams into plasma-based accelerators Andreas R. Maier - DESY	40'	Staging laser wakefield acceleration research at Osaka university; Towards practical accelerators Tomonao HOSOKAI - Osaka University	40'				
10:30	Coffe Break (10:30-11:00)		Coffe Break			Coffe Break and Group Picture			Coffe Break			Coffe Break		
Invited Talks			Invited Talks			Invited Talks			Invited Talks			Invited Talks		
11:00	BELLA: multi-GeV electron beam generation and outlook Wim P. Leemans - LBNL	30'	Recent advances in plasma accelerator modelling and theory Luis Silva - IST Lisboa	30'	Prospects for advanced combined laser and beam driven plasma accelerators Bernhard Hidding - Strathclyde	30'	LWFA electron beam manipulation for FEL amplification Alexandre Loulergue - Soleil	30'	Experimental program with the multi-PW laser of the Apollon facility in the CILEX centre Patrick Audebert- LULI	30'				
11:30	High Efficiency and High-Gradient Acceleration of Electrons and Positrons in a Plasma Wakefield Accelerator Chan Joshi - UCLA	30'	PIC modelling of laser-solid interactions: from ion acceleration to high field plasmonics Andrea Sgattoni - CNR Pisa	30'	Prospects for proton-driven plasma acceleration Allen Caldwell - MPP	30'	Ultra-compact all-optical FELs and Compton sources Alexander Debus - HZDR	30'	State-of-the-art high power and rep' rate laser Frederic Druon - Institut d'Optique	30'				
12:00	Beam manipulation with Velocity Bunching for PWFA applications Riccardo Pompili - INFN	30'	Using ionization injection to get high quality electron beam in laser wakefield acceleration Min Chen - Shanghai Jiao Tong University	30'	Laser Wakefield Acceleration of positrons in the blowout regime Jorge Vieira - IST Lisboa	30'	Staging acceleration to improve an energy spread in laser wakefield acceleration Masaki Kando - JAEA	30'	From conventional to advanced concepts for Linear Colliders Daniel Schulte - Cern	30'				
12:30	Lunch Break (12:30-16:00)		210'	Lunch Break (12:30-15:00)		150'	Lunch Break (12:30-16:00)		210'	Lunch Break (12:30-15:20)				
16:00	Working Groups WG1 - WG2 -WG3 -WG4 - WG5		90'	Working Groups WG1 - WG2 -WG3 -WG4 - WG5		150'	Working Groups WG1 - WG2 -WG6 - WG7		90'	Working Groups WG1 - WG4 -WG6		Invited Talks Science and the art of inventiveness Andrei Seryi - John Adams Inst.		
Coffe Break (17:30-18:00)														
18:00	Working Groups WG1 - WG2 -WG3 -WG4 - WG5		90'	Working Groups WG1 - WG2 -WG3 -WG4 - WG5 The Power of Procrastination Jorge Cham		30' 60'	Working Groups WG1 -WG6 - WG7		90'	Working Groups WG1 - WG4 -WG6		90'	Working Groups WG4 -WG5 - WG6 - WG7	
19:30	Wine and Poster Session WG1-WG2-WG3-WG4		60'			60'	Wine and Poster Session WG5-WG6-WG7		60'			60'		
20:30	Dinner			Dinner			Dinner			Social Dinner and Dance			Dinner	
22:00							The PHD Movie by Jorge Cham							
WG1 @ SML (Sala Maria Luisa)			WG7-WG4 @ SE (Sala Elena)			WG2 @ SB1 (Sala Bonaparte 1)			WG6- WG3 @ SB2 (Sala Bonaparte 2)			WG5 @ SBIO (Sala Biodola)		



PROFILE: JORGE CHAM

Piled Higher and Deeper: The Everyday Life of a Grad Student

Jorge Cham has been capturing the trials and tribulations of grad school in a comic strip for more than a decade; now he's left the lab for the lecture circuit

Jorge Cham is not a Nobel laureate, but the popularity of his keynote lectures and his following in the scientific world are enough to make even the most distinguished professor green with envy. Cham, 33, is the brains behind the comic strip *Piled Higher and Deeper*—*PhD* for short—and it's made him a celebrity among graduate students, with 4.7 million visitors a year to his Web site and a battalion of fans in labs all over the planet. His fourth book, *Academic Stimulus Package*, is scheduled for publication this month.

Supervisors interested in learning what's on their students' minds might find *PhD* an illuminating place to start. After all, "every professor was once a graduate student," says Anthony Finkelstein, head of the Computer Sciences department at University College London (UCL) and a *PhD* fan. Cham's comic strip resonates with graduate students and professors alike because it deals with everyday frustrations of life in the lab—procrastination, dealing with advisers, serving on committees, lack of inspiration—and its appeal seems to be universal. "I live all those issues every day," says Martha Elena Ibarra, a molecular biology Ph.D. student at the Cinvestav laboratory in Irapuato, Mexico. "It makes you feel you're not the only one out

there," says Shrikant Sundaram, an electrical engineering master's student at the University of Southern California in Los Angeles.

Cham, who is surprisingly low-key for somebody with such a sharp eye and an edge to his humor, grew up in Panama in a science-oriented family. Both of his parents have graduate degrees and taught at the University of Panama. "I guess you could say geekiness is in our genes," Cham says, "but they also instilled in us to value education and hard work."

As a child, Cham dreamed of becoming an engineer. "I was interested in machines and movement, so mechanical engineering seemed the best fit and robotics the most interesting to me within that," he says. He graduated from the Georgia Institute of Technology in Atlanta in 1997 with a bachelor's degree in mechanical engineering and got into cartooning almost by accident.

In the fall of 1997, a few weeks after he started a master's program in mechanical engineering at Stanford University in Palo Alto, California, the student newspaper *The Stanford Daily* put out a call for a new comic strip. Cham, his brother Jaime, who was also

a graduate student at Stanford, and a few friends discussed some ideas for a comic strip over dinner. "My brother said he always thought there should be one about grad school, because that's when the real pain begins," Cham recalls.

Cham was enthused. Although he had doodled as a child and his school notebooks were filled with little drawings, he had never tried sketching comics before.

"At the time, I was also reading a book about *Doonesbury*," the comic strip that has provided wry social and political commentary since 1970, "so I was kind of inspired in that way," he says. Despite being busy with a full load of classes and teaching assistant duties, Cham says, "I somehow thought it would be a good idea to draw a comic 5 days a week."

Cham proposed a comic strip that would center on the life (or lack thereof) of a group of overworked, underpaid, procrastinating graduate students and their terrifying advisers. *The Stanford Daily's* editors liked the idea, and in October 1997, *Piled Higher and Deeper* was born. A few weeks later, Cham created the Web site on which, to this day, his comic strip is available for free.

From the beginning, *PhD* has featured a regular cast of characters: the nameless hero, suspiciously similar to the author himself; geeky Cecilia, the dedicated engineering student; Mike Slackernery, who takes laziness to a whole new level; social scientist Tajel; the absent-minded Professor Jones; and the demanding Professor Smith. Cham insists that none of them is based on real people, but he acknowledges that he was inspired by colleagues

"from the research center where I worked, to my cohort of classmates, to a lot of my brother's friends."

Split careers

Cham kept up the comic strip while he finished his master's degree and continued it during the 4 years he spent at Stanford studying for a Ph.D. His research was part of a multidisciplinary project to build a sturdy and fast six-legged robot—a design inspired by cockroaches—capable of maneuvering in bumpy terrain. Cham's role was to design the legs and joints. "He was a great student, creative and hardworking and very sharp,"

Online sciencecareers.org

This article is part of a special Science Careers feature on scientists who have left the bench.

45 Fellowships have been assigned

Piled Higher and Deeper by Jorge Cham www.phdcomics.com



Prof Smith recommendation:
Students will have dinner at their own hotel
(except for the social dinner of course)

Deadline for workshop proceedings submission: **October 31**

- All the plenary talks will be recorded and posted on the workshop website
- Please upload your files via INDICO

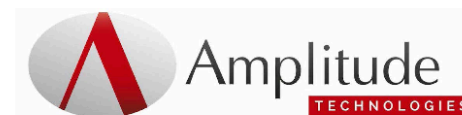


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Mission: To extend and support the international collaboration and communication in the field of new acceleration techniques.

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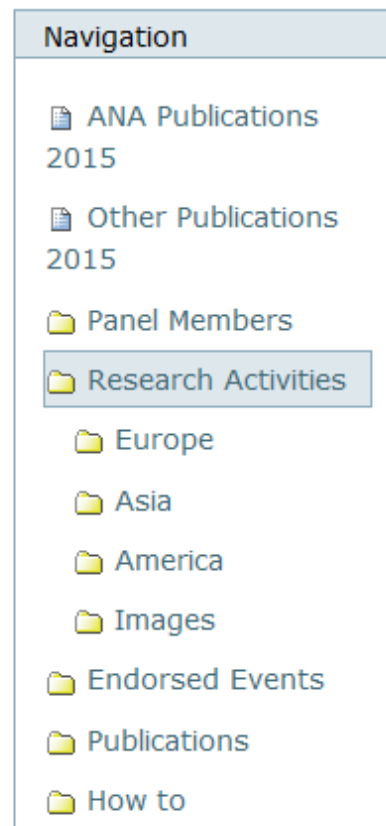
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ANA Publications 2015

Articles published in 2015 in refereed international journals related to Advanced and Novel Accelerators

- [Ponderomotive acceleration by relativistic waves](#), C. K. Lau, P. C. Yeh, O. Luk, J. McClenaghan, T. Ebisuzaki, and T. Tajima, *Phys. Rev. ST Accel. Beams* **18**, 024401 (2015).
- [High energy protons generation by two sequential laser pulses](#), Xiaofeng Wang, Baifei Shen, Xiaomei Zhang, Wenpeng Wang, Jiancai Xu, Longqing Yi and Yin Shi, *Phys. Plasmas* **22**, 043106 (2015).
- [Synergistic Laser–Wakefield and Direct–Laser Acceleration in the Plasma–Bubble Regime](#), Xi Zhang, Vladimir N. Khudik, and Gennady Shvets, *Phys Rev Lett*, **114**, 184801 (2015).
- [Coulomb–Driven Energy Boost of Heavy Ions for Laser–Plasma Acceleration](#), J. Braenzel, A. A. Andreev, K. Platonov, M. Klingsporn, L. Ehrentraut, W. Sandner, and M. Schnürer, *Phys Rev Lett*, **114**, 124801 (2015).
- [Enhancement of maximum attainable ion energy in the radiation pressure acceleration regime using a guiding structure](#), S. S. Bulanov, E. Esarey, C. B. Schroeder, S. V. Bulanov, T. Zh. Esirkepov, M. Kando, F. Pegoraro, and W. P. Leemans, *Phys Rev Lett*, **114**, 105003 (2015).
- [Plasma Undulator Based on Laser Excitation of Wakefields in a Plasma Channel](#), S. G. Rykovanov, C. B. Schroeder, E. Esarey, C. G. R. Geddes, and W. P. Leemans, *Phys Rev Lett*, **114**, 145003 (2015).
- [Compact quasi–monoenergetic photon sources from laser–plasma accelerators for nuclear detection and characterization](#), Cameron G. R. Geddes, Sergey Rykovanov, Nicholas H. Matlis, Sven Steinke, Jean–Luc Vay, Eric H. Esarey, Bernhard Ludewigt, Kei Nakamura, Brian J. Quiter, Carl B. Schroeder, Csaba Toth, Wim P. Leemans, *Nucl Instrum Methods B*, **350**, 116 (2015).
- [Multichromatic Narrow–Energy–Spread Electron Bunches from Laser–Wakefield Acceleration with Dual–Color Lasers](#), M. Zeng, M. Chen, L.L. Yu, W.B. Mori, Z.M. Sheng, B. Hidding, D.A. Jaroszynski, and J. Zhang, *Phys Rev Lett*, **114**, 084801 (2015).
- [Drift effect on vacuum birefringence in a strong electric and magnetic field](#), Yongsheng Huang, Naiyan Wang, Xiuzhang Tang, *Chinese Physics B*, **24**, 034201 (2015).
- [Acceleration of highly charged GeV Fe ions from a low–Z substrate by intense femtosecond laser](#), M. Nishiuchi, H. Sakaki, T. Zh. Esirkepov, K. Nishio, T. A. Pikuz, A. Ya. Faenov, I. Yu. Skobelev, R. Orlandi, H. Sako, A. S. Pirozhkov, K. Matsukawa, A. Sagisaka, K. Ogura, M. Kanasaki, H. Kiriya, Y. Fukuda, H. Koura, M. Kando, T. Yamauchi, Y. Watanabe, S. V. Bulanov, K. Kondo, K. Imai and S. Nagamiya, *Phys Plasmas*, **22**, 033107 (2015).
- [Step density model of laser sustained ion channel and Coulomb explosion](#), Satish Kumar Rajouria, H. K. Malik, V. K. Tripathi and Pawan Kumar, *Physics of Plasmas*, **22**, 023104 (2015).
- [Plasma wakefield acceleration studies using the quasi–static code WAKE](#), Neeraj Jain, John Palastro, T. M. Antonsen Jr., Warren B. Mori and Weiming An, *Physics of Plasmas*, **22**, 023103 (2015).
- [High quality electron bunch generation with CO₂–laser–plasma interaction](#), Lingang Zhang, Baifei Shen, Jiancai Xu, Liangliang Ji, Xiaomei Zhang, Wenpeng Wang, Xueyan Zhao, Longqing Yi, Yahong Yu, Yin Shi, Tongjun Xu and Zhizhan Xu, *Physics of Plasmas*, **22**, 023106 (2015).
- [Compact tunable Compton x–ray source from laser–plasma accelerator and plasma mirror](#), Hai–En Tsai, Xiaoming Wang, Joseph M. Shaw, Zhengyan Li, Alexey V. Arefiev, Xi Zhang, Rafal Zgadzaj, Watson Henderson, V. Khudik, G. Shvets and M. C. Downer, *Phys. Plasmas* **22**, 023101 (2015).
- [Nonlinear surface plasma wave induced target normal sheath acceleration of protons](#), C. S. Liu, V. K. Tripathi, Xi Shao and T. C. Liu, *Physics of Plasmas*, **22**, 023105 (2015).

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Virtual Institute for plasma wakefield acceleration of highly relativistic electrons with FLASH



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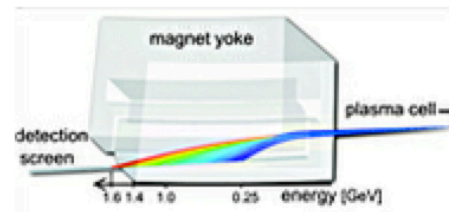


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Working Group 2: Beam Instrumentation

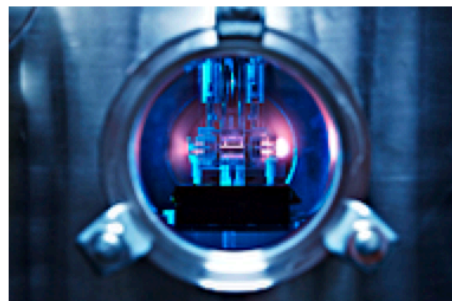


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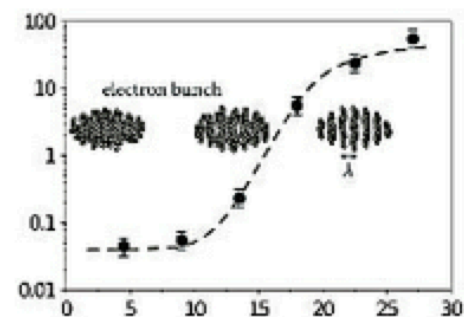


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Working Group 4: Photon Sources



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**Have a nice and fruitful
workshop**

