

poster session EUROFEL07

	Contact person	task	authors	title	abstract
1	Chase Boulware	DS1	Juergen W. Baehr, Charles H. Boulware, Hans-Juergen Grabosch, Marc HŠnel, Sergiy Khodyachykh, Sergey Korepanov, Mikhail Krasilnikov, Sven Lederer, Anne Oppelt, Bagrat Petrosyan, Sabine Riemann, Sakhorn Rimjaem, Thomas Scholz, Lazar Staykov, Frank Stephan (DESY Zeuthen, Zeuthen), Dieter Richter (BESSY GmbH, Berlin), Klaus Floettmann (DESY, Hamburg), Galina Asova [on leave], Konstantin Konstantinov Boyanov [on leave] (INRNE, Sofia), Andrey Shapovalov [on leave] (MEPhI, Moscow), Juliane Roensch (Uni HH, Hamburg), Levon Hakobyan [on leave] (YerPhI, Yerevan)	Recent Experimental Results from PITZ	The Photo Injector Test facility at DESY in Zeuthen (PITZ) was built to develop and optimize electron sources for superconducting linac driven, high power, short wavelength FELs. To meet the stringent requirements on beam quality for the European XFEL, a substantial upgrade program is ongoing at PITZ. In a first operation period during October 2006, projected normalized transverse emittances in both transverse planes between 1.2 and 1.5 mm mrad for a bunch charge of 1 nC were measured. These results are in good agreement with simulations. A major step towards even lower emittance is the increase of the electric field at the photo cathode from 40 MV/m to 60 MV/m. With these upgrades, simulations predict a projected normalized transverse emittance of 1.2 mm mrad and better for 1 nC bunch charge in the running period scheduled for summer 2007. This contribution will give an overview of the experimental results obtained at PITZ in the operation periods of October 2006 and summer 2007 (e.g. transverse and longitudinal phase space measurements, dark current and cathode
2	David Holder	DS1	B.Muratori, D.J.Holder, S.Khodyachykh, G.Asova	Spacecharge Modelling and Compensation for the PITZ2 Tomography Diagnostic Design	The results of modelling the effects of spacecharge in the PITZ2 diagnostic line in GPT are presented, with particular focus on the tomography diagnostic.
3	Luca Cultrera	DS1	L. Cultrera, C. Ristoscu, G. Gatti, P. Miglietta, F. Tazzioli, A.Perrone	Photoemission characteristics of PLD grown Mg films under UV	
4	Olivier Gobert	DS1	O. Gobert, D. Garzella, S. Grabielle, J.-F. Hergott, P. Hollander, T. Oksenhendler, O. Tcherbakoff.	Last Results and Future Issues on UV Temporal and Spatial Shaping Laser Pulse shaping	The recents results on the pulse shaping activity at CEA on CPA-based Ti:S laser systems are here shown. Supergaussian (top-hat) and parabolic temporal shapes in the UV at 266 nm have been obtained. In the spatial domain, a setup, based on the use of aspheric systems, has been successfully tested and a uniform laser spatial distribution with a good field depth has been achieved. Preliminary studies on the use of deformable mirrors are discussed The numerical studies made in both temporal and spatial domain, comforting the experimental results, are also shown.
5	Edward Arevalo	DS1	E. Arevalo, W. Ackermann, S. Schnepf, T. Weiland	Wake Field Simulations Through Diagnostic Devices For PITZ	The simulations of wake fields excited by ultrashort electron bunches in accelerator components with geometrical discontinuities is a challenging problem, as an accurate resolution for both the small bunch and the large model geometry are needed. Several computational codes have been developed to deal with this type of problems. Here we present a comparison of wake potentials numerically calculated with the code Parallel Beam Cavity Interaction (PBCI) and the commercial software CST PARTICLE STUDIO(TM). Several structures of the Photoinjector Test Facility at DESY Zeuthen (PITZ) are considered as examples.
6	Guido Klemz	DS1	G.Klemz, I.Will	Laser Beam shaping for RF Photoinjectors	
7	Luca Ficcadenti	DS1	L. Ficcadenti, L. Palumbo, A. Mostacci, D. Alesini, C. Vaccarezza, G. Di Pirro, J. Rosenzweig	SPARC RF Deflector	The longitudinal phase space and the horizontal beam slice emittance measurements of the SPARC 150MeV-1nC electron beam foresee the use of a RF deflector. The device is a five cells standing wave structure operating on the TM110-like dipole mode at 2.856 Ghz and allows reaching a longitudinal resolution of about 12um with 2MW of peak input power. In the paper we illustrate the RF measurements results on the final brazed copper device.
8	Simone Spampinati	DS2	S.Spampinati, S.Di Mitri, B.Diviacco	A laser heater for FERMI@ELETTRA	To cure the microbunching instability in the FERMI@elettra FEL a laser heater is proposed. The one-dimensional model of the instability predicts a large energy modulation cumulating as the electron beam travels along the linac. According to analytical studies and simulations the longitudinal Landau damping provided by the laser heater is expected to help in suppressing the formation of such a modulation. The efficiency of the beam heating is studied as function of the transverse laser-electron beam mismatch in the laser heater undulator in case of a realistic transverse beam profile.
9	Andrea Renato Rossi	DS2			

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10	Valeria Fusco	DS2	V. Fusco, M. Ferrario	Development of the Homdyn code and applications to the beam dynamics of a photo-injectors like Sparc with comparisons to experimental measurements	Wake fields effects in addition to space charge forces may have an important impact during the emittance compensation process in a high brightness photo-injector. To study this effect we developed an upgraded version of the Homdyn code including off axis beam dynamics and wake fields. Homdyn describes a bunch as a uniformly charged cylinder, divided in cylindrical slices; in the upgraded version each slice's centroid can be transversally displaced from the nominal axis thus inducing wake fields. When the bunch is short as compared to the beam pipe radius, wake fields for a single cavity are calculated using methods of diffraction theory; instead we use, for a periodic collection of cavities, an asymptotic wake field obtained numerically at SLAC and then fitted to a simple function. As a first application we studied a correction scheme for the SPARC photo-injector to control the bunch trajectory and angle at the entrance of the undulator. The correction scheme consists of a number of steering magnets and beam position monitors placed along the photo-injector.
11	Luca Banchi	DS3	Luca Banchi		
12	Leon Pavlovic	DS3	Leon Pavlovic		
13	David Garzella	DS3	O. Gobert, D. Garzella, S. Grabielle, J.-F. Hergott, P. Hollander, T. Oksenhendler, O. Tcherbakoff.	Atomic Clock based Repetition Rate Stabilization of a mode-locked Ti:S Oscillator and Jitter-Free Operation of a High Power CPA Laser System.	The goal of the CEA/SPAM/SLIC activity for DS3 task is twofold. The Ti:S Oscillator operates as a clock reference, where its repetition rate is phase locked to a rubidium clock. The phase-locked loop generates the control signal for a PZT controlling the position of the cavity output coupler. Frequency drifts, which had been monitored and correlated with the environmental factors on a long time-scale, are totally compensated. The frequency instability (Allan Deviation) is thus 1×10^{-11} at 1 sec. Time jitter has been obtained by measuring the phase noise signal. The final goal of this work was to characterize the timing of a CPA laser system. The experiment aiming at measuring the jitter and the drifts between the amplified (few mJ, 1 KHz repetition rate) laser pulse and the oscillator one by means of the spectral interferometry technique is here presented and discussed.
14	Filip Lindau	DS4	F. Lindau, M. Brandin, N. Cutic, D. Pugachov, S. Thorin, S. Werin	Overview of the lasersystem for the MAX-lab FEL test facility (preliminary title)	
15	Sverker Werin	DS4	Mathias Brandin, Filip Lindau, Sara Thorin, Sverker Werin, MAX-lab, Lund Johannes Bahrdt, Kathrin Goldammer, Michael Abo-Bakr, Dmytro Pugachov, BESSY GmbH, Berlin Anne LÖHuillier, Marko Swoboda, Lund University, Lund	Status of the FEL test facility at MAX-lab	
16	Sara Thorin	DS4	Sara Thorin, Mathias Brandin, Nino Cutic, Filip Lindau, Dmytro Pugachov, Swerker Werin MAX-lab Kathrin Goldammer, Johannes Bahrdt BESSY GmbH	Start-to-end simulations and ideas for compression with sextupoles	
17	Carlo Spezzani	DS4	Carlo Spezzani and Paolo Sigalotti	Longitudinal alignment for the seeded FEL scheme at the Elettra storage ring	Coherent harmonic generation via seeding of an electron bunch in the optical klystron layout strongly relies on our capacity to couple the electromagnetic field of the seed laser to the electron bunch inside the modulator. In order to guarantee a stable longitudinal superposition, state of the art synchronization solutions must be adopted. We present here the timing scheme that we successfully used to seed the Elettra storage ring bunch.
18	Oliver Kugeler	DS5	Oliver Kugeler, Axel Neumann, Wolfgang Anders, Jens Knobloch	Comparison of different tuning systems for TESLA cavities with respect to cw operation	BESSY has planned a FEL that will be operated with TESLA type cavities at high Q-values in cw mode. These operating parameters imply a low cavity bandwidth and high sensitivity towards ponderomotive oscillations, in particular microphonics. In the HoBiCaT facility, located at BESSY, we have tested various tuning systems in existence (Saclay I, Saclay II, and Meier-Weichert tuner) and compared their usability for cw cavity operation. We came to the conclusion that the Saclay II tuner is best fitted for the needs at BESSY.
19	Wolfgang Anders	DS5	W.Anders, J.Knobloch, O.Kugeler, A.Neumann	CW Operation of SC TESLA Cavities	Several newly proposed superconducting linacs are designed to use TESLA technology operating CW rather than pulsed for which the system was developed. It must therefore be demonstrated that CW operation is feasible. To address these issues, BESSY build the HoBiCaT test facility [1] for testing superconducting RF (SRF) TESLA cavities under cryogenic conditions in CW mode. The main issues of CW operation were examined and solutions are shown on following topics: Limits of heat conduction in the Helium vessel, gas dynamics in the two phase line, layout of a CW cryo module, heating of HOM couplers, CW operation of the main RF coupler, choice of helium bath temperature, pressure stability of the helium bath and microphonics and their compensation.

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20	Gerald Staats	DS5	tbd	tbd	tbd
21	Carl Beard	DS5	C.D.Beard, P.A.McIntosh, J.W.McKenzie B.L.Militsyn, B.D.Muratori	A High Current SRF Gun Conceptual Design	A 100 mA 10 MeV continuous wave electron Injector is required to supply electron bunches for the spontaneous and VUV radiation sources for 4GLS. At present, no design is capable of delivering such high energy focused beams, therefore a bespoke system is being developed. Optimisation of the first half cell has been carried out to maximise the acceleration whilst providing additional focussing through shaping of the cathode region to meet the design specification. In this paper, the cavity design and specification are presented.
22	Xilong Wang	DS6	X L Wang, Tobias Schnautz	status report on work package DS6	