4. Wencan Xu, et al, “Progress on the high-current 704 MHz superconducting RF cavity at BNL”, Proc. IPAC2012, pp. 2486-2488.
5. Wencan Xu, et al, “Vertical test results of 704 MHz BNL3 SRF cavities”, Proc. LIAC2012.
6. ABCI, Azimuthal Beam Cavity Interaction, http://abci.kek.jp/
7. G. H. Hoffstaetter and I. V. Bazarov, Phys. Rev. ST Acecel Beams 7, 054401 (2004).
8. C. Song and G. Hoffstaetter , “Beam breakup simulation for the Cornell X-Ray ERL”, PAC 2007, Japan. http://www.lepp.cornell.edu/~hoff/papers/07bbu_pac.pdf

3 Workshop and Conference Reports

3.1 The 56th ICFA Advanced Beam Dynamics Workshop on Energy Recovery Linacs, ERL2015

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Energy recovery linacs generate a lot of interest in the accelerator and user communities as the recent 56th ICFA Advanced Beam Dynamics Workshop on Energy Recovery Linacs (ERL2015, https://www.bnl.gov/erl2015/) has demonstrated. The workshop was held at Stony Brook University, Stony Brook, NY, USA from June 7 to 12, 2015 and was attended by 114 participants representing institutions from Asia, Europe and USA. ERL2015 was the sixth workshop in the series of international workshops covering accelerator physics and technology of Energy Recovery Linacs.

The scientific program of the workshop was set up by the International Organizing Committee, chaired by S. Belomestnykh (BNL and Stony Brook University), and International Program Committee, chaired by D. Kayran (BNL). The workshop was hosted by Brookhaven National Laboratory, its Local Organizing Committee was chaired by V. Ptitsyn and included P. Manning, A. Petway, C. Hoffman, S. Belomestnykh and D. Kayran.

72 talks were presented during plenary and parallel working group (WG) sessions. Along with “traditional” applications of ERLs such as X-ray light sources, FELs, electron-ion colliders, and electron coolers, several new proposals and ideas were presented at the workshop. Among those are: a compact ultra-high flux X-ray and THz source at John Adams Institute, ERLs for nuclear physics research MESA at Mainz University and particle physics experiments at the jointly proposed BNL/Cornell demonstration multi-pass FFAG machine, γ-ray sources, an ERL facility at CERN for applications and even a concept of lepton ERL scalable to TeV energies presented by V.N. Litvinenko (Stony Brook University and BNL). However, only a few big proposals are actually funded. The field is very active, but is still in the development/demonstration stage. M. Tigner (Cornell University) in his talk outlined challenges to realization of ERLs.

The five working groups covered a wide spectrum of topics essential for ERLs. WG1, convened by T. Kamps (HZB) and A. Bartnik (Cornell University), was dedicated to exploring the results and new technologies available in injectors (lasers,

cathodes, guns) since the previous ERL Workshop. WG2, where conveners were M. Abo-Bakr (HZB) and V. Ptitsyn (BNL), addressed the optics and beam dynamics challenges in ERLs: lessons learnt from past and present ERL operation as well as issues arising during the design work on future ERL facilities. WG3, directed by T. Obina (KEK) and C. Gulliford (Cornell University), discussed beam instrumentation, controls, beam losses and halo management. WG4 was organized by H. Sakai (KEK) and E. Jensen (CERN) focused on Superconducting RF technology, RF and RF control to identify the critical issues of each component in cryomodule construction, assembly works and beam operation for ERL. Finally, V.N. Litvinenko (Stony Brook University and BNL) and O. Bruning (CERN), conveners of WG5, arranged talks on potential applications of the ERL technology, covering a broad range of applications.

There was one poster session, where 12 posters have been presented, including a 3D HDTV demonstration of the BNL's eRHIC FFAG accelerator layout and BNL/Cornell Cbeta project. The two plenary sessions at the end of the workshop were devoted to the summary presentations from each working group.

The detail program and talks are available via the workshop website. The workshop proceedings will be published at JACoW.

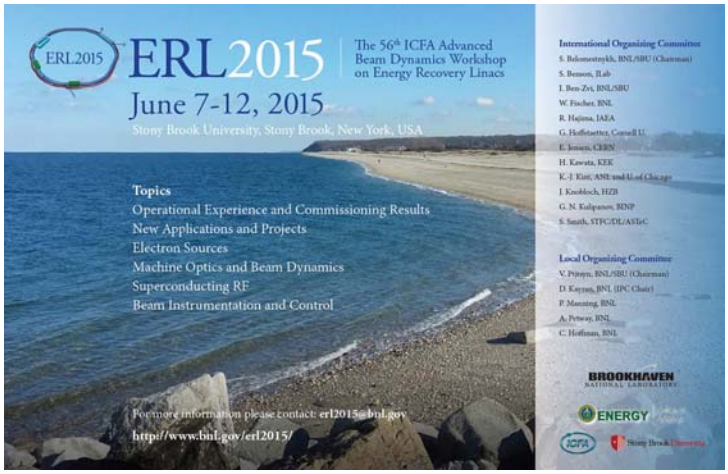

Figure 1: ERL2015 Workshop poster.

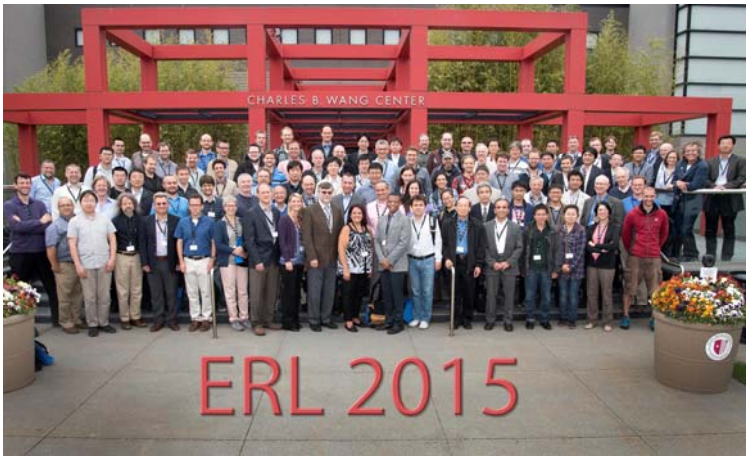

Figure 2: Participants of the ERL2015 Workshop.