7/31/2025

CURRICULUM VITAE

Gang Wang

Brookhaven National Laboratory
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Education

Ph.D.	Physics State University of New York at Stony Brook, Stony Brook, NY (USA) Research Advisor: Ilan Ben-Zvi Thesis Title: "Coherent Electron Cooling and Two Stream Instabilities due to Electron Cooling"	2008
M.A.	Physics Peking University, Beijing, P.R. China Research Advisor: Ze-Sen Yang	2001
B.S.	Physics Sichuan University, Chengdu Sichuan Province, P.R. China	1998

Employment History

Physicist 2014 - present

I am currently working on the proof of principal experiment for coherent electron cooling (CeC) and beam dynamics studies for electron ion collider (EIC) at BNL.

Associate Physicist 2012 – 2014
Collider-Accelerator Department
Brookhaven National Laboratory, Upton, NY

I worked on developing simulation and theoretical tools for a FEL-based CeC system. I was also involved in beam dynamics studies for Low Energy RHIC operation with Electron Cooling and beam dynamics studies for future electron ion collider (EIC) at BNL.

Assistant Physicist 2010 - 2012
Collider-Accelerator Department
Brookhaven National Laboratory, Upton, NY

I worked on the direction of theoretical modelling of Coherent Electron Cooling and was also involved with beam dynamics studies for future electron ion collider (EIC) at BNL.

Postdoctoral-Research Associate 2008-2010
Collider-Accelerator Department
Brookhaven National Laboratory, Upton, NY

I worked on two subjects with two researching groups, the eRHIC group and the Accelerator Physics group. In the eRHIC group of Accelerator R&D Division, my work involved theoretical modeling of the coherent electron cooling (CEC) based on a high-gain free electron laser (FEL). This technique could be critical for reaching high luminosities. In the Accelerator Physics group of the Accelerator Division, my work was focused on developing techniques and computer codes for linear optics correction, which took advantage of the long lasting coherent oscillation excited adiabatically by AC-Dipole.

Research Associate 2004-2008
Collider-Accelerator Department
Brookhaven National Laboratory, Upton, NY

I worked in the electron-cooling group for my Ph. D thesis and concentrated on the two stream coherent instabilities introduced by the cooling electrons. Together with M. Blaskiewicz, I also worked on modeling the modulation process of the coherent electron cooling. We achieved an analytical formula to describe the ion shielding effect in anisotropic electron plasma.

Research and Professional Accomplishments

Research interests include: Accelerator physics, including beam cooling, collective instabilities and free electron lasers.

Honors and Awards

Di Tian Award, Physics and Astronomy Department, 2008
Stony Brook University, Stony Brook, NY

Teaching

Adjunt Professor 912/2022-present
Department of Physics and Astronomy, Stony Brook University, New York
Co-teaching in course 'Fundamentals of Accelerator Physics' with V.N. Litvinenko, Y. Hao and Y. Jing

Adjunt Associate Professor 9/2016-12/2022
Department of Physics and Astronomy, Stony Brook University, New York
Co-teaching in course 'Fundamentals of Accelerator Physics' with V.N. Litvinenko, Y. Hao and Y. Jing

Adjunt Assistant Professor 9/2015-8/2016
Department of Physics and Astronomy, Stony Brook University, New York
Co-teaching in course 'Advanced Accelerator Physics' with V.N. Litvinenko and Y. Jing

Referee Activities

I am a regular referee for PRL, PRAB and NIM. I also review SBIR proposals for DOE.

Oral Presentations

"Proof-of-Principle Experiment for FEL-based Coherent Electron Cooling", at 2011 Particle Accelerator Conf. (PAC11), New York, USA, March 28-April 1, 2011 (in press).

"Influence of e–beam Parameters on Coherent Electron Cooling", invited at 2012 International Particle Accelerator Conf. (IPAC12).

"Advanced Theoretical Aspects of CEC", invited at International Workshop on Accelerator Science and Technology for Electron-Ion Collider. (EIC14).

"Developing Analytical and Simulation Tools for a Coherent Electron Cooling System", invited at the 11th International Workshop on Beam Cooling and Related Topics. (COOL2017)

'CeC Theory and 3D Simulations', invited at EIC Hadron Cooling Workshop (2019)

'Coherent Electron Cooling for the Electron-Ion Collider', the 525th Brookhaven Lecture (2022)

Synergistic Activities

Scientific Committee Chair for ICFA mini-workshop CeC 2019
Convener for EIC Hadron Cooling Workshop 2019