Zvi Citron

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CONTACT INFORMATION
Ben Gurion University of the Negev
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CITIZENSHIP
USA, Israel

CURRENT EMPLOYMENT
Ben Gurion University of the Negev, Be'er Sheva, Israel
Senior Lecturer (tenure track) *October 2017 to present*

PREVIOUS EMPLOYMENT
Weizmann Institute of Science, Rehovot, Israel
Postdoctoral Fellow *2011 to 2017*

EDUCATION
Stony Brook University, Stony Brook, NY USA
Ph.D., Experimental Nuclear Physics *March 2011*
- *Probing the Nucleus with d+Au Collisions at RHIC*
- Advisor: Professor Thomas K. Hemmick

Hampshire College, Amherst, MA USA
B.A., Physics *May 2005*
- Senior Thesis: *The Good, the Bad, and the Hadronic: A Null Hypothesis for RHIC Collisions*
- Supervisors: Professors Fred Wirth and David Kelly

RESEARCH EXPERIENCE
Ben Gurion University of the Negev, Be'er Sheva, Israel
Senior Lecturer *October 2017 to present*
- QGP formation in small and large systems
  Ongoing research in the nature of the Quark Gluon Plasma with the ATLAS detector, and in particular the conditions necessary for its formation in different collision systems.
- ATLAS Group and Analysis Leader
  Convener of the ATLAS group preparing the CERN yellow report on heavy-ions at the HL-LHC. Serve on editorials board for paper preparation of diverse range of analyses.
- R&D for LHC Zero Degree Calorimeter
  Ongoing research and development of a hadronic calorimeter of unprecedented radiation hardness for installation in several experiments at the LHC. Focus on radiation hard materials.

Weizmann Institute of Science, Rehovot, Israel
Postdoctoral Fellow *May 2011 to 2017*
- Electro-weak boson analysis in p+p, p+Pb, and Pb+Pb collisions.
  Using Z bosons to understand the nuclear geometry of heavy ion and semi-heavy ion collisions as well as a probe of searching for modification of the nuclear parton distribution function. Similar analysis with W bosons.
- ATLAS Group and Analysis Leader
  Organize and chair the ATLAS Heavy-Ion Electroweak/Quarkonia working group. Serve on editorials board for paper preparation of diverse range of analyses.
- Became a member of the ATLAS Collaboration
  Qualification work involved maintaining and updating muon reconstruction software

Stony Brook University, Stony Brook, NY USA
Research Assistant with PHENIX *2005 to 2011*

- Rapidity separated particle production in $p + p$ and $d + Au$ collisions.

  Investigated a possible signature of the Color Glass Condensate (CGC) using rapidity separated particle pair production. Comparison of $d + Au$ to $p + p$ collisions allowed a consistent check for CGC effects.
- Inclusive charged hadrons in $d + Au$ and pseudo $N + Au$ collsions.

  Analyzed centrality dependence of inclusive charged hadrons, and developed single nucleon event tagging method.
- Construction, testing, and commissioning of the Hadron Blind Detector (HBD) PHENIX upgrade.

  Testing and construction of the PHENIX HBD detector upgrade and its components including clean room assembly, test-bench setup, high voltage operation, and software development.
- Became a member of the PHENIX Collaboration

Research Experience for Undergraduates,
NSF Physics Summer Program *2004*

- Investigation of a hadronic model for relativistic heavy ion collisions

  Investigated the effectiveness of purely hadronic models (**HSD** and **uRQMD**) in describing RHIC Au+Au collisions.
- Advisor - Dr. Thomas K. Hemmick

Universit degli Studi di Roma "La Sapienza", Rome, Italy
DOE-NSF/INFN Fellowship *2004*

- Automated testing method of the Silicon Drift Detector electronics for the ALICE experiment.
- Supervisor - Dr. Sergio Diliberto

TEACHING EXPERIENCE

Ben Gurion University of the Negev, Be'er Sheva, Israel

- Teach second year physics laboratory course, and Physics 1 for health sciences.
- Supervisor for masters students and undergraduate student research projects.

Weizmann Institute of Science, Rehovot, Israel *2012 to 2017*

- Supervised student researchers at undergraduate, masters, and doctoral candidate levels

Stony Brook University, Stony Brook, NY USA *2006 to 2007*

- Teaching assistant for Physics 121/122 - Undergraduate Physics Laboratory.

Hampshire College, Amherst, MA USA *2002 to 2003*

- Teaching assistant for Physics 1 & 2 - Undergraduate Physics and Laboratory.

RESEARCH GRANTS

National Science Foundation (USA) -Bilateral Science Foundation (Israel) 2020773 *2022-2024*
" Irradiation Studies of Cherenkov Radiators for Use in Zero Degree Calorimeters and Reaction Plane Detectors During the High Luminosity LHC Era"

National Science Foundation (USA) -Bilateral Science Foundation (Israel) 2017675 *2018-2021*
"Very Radiation Hard Zero Degree Calorimeters for the LHC"

Israel Science Foundation Individual Research Grant 1946/18 *2018-2022*
"Study of Quark-Gluon Plasma Formation at the LHC using the ATLAS Detector"

AWARDS

Allon Fellowship *2017*
US-Israel Fulbright Scholar *2011-2012*

SELECTED PUBLICATIONS

Can transverse mass scaling shed light on the event-activity dependence of Upsilon mesons production at LHC? *Phys. Rev. D 107, 014012* **2023**

^{22}Na activation level measurements of fused silica rods in the LHC target absorber for neutrals compared to simulations *Phys. Rev. Accel. Beams 25, 091001* **2022**

Exclusive dimuon production in ultraperipheral Pb+Pb collisions at $\sqrt{s_{NN}}$=5.02 TeV with ATLAS *Phys. Rev. C 104, 024906* **2021**

Two-particle azimuthal correlations in photonuclear ultraperipheral Pb+Pb collisions at 5.02 TeV with ATLAS *Phys. Rev. C 104, 014903* **2021**

Z boson production in Pb+Pb collisions at $\sqrt{s_{NN}}$=5.02 TeV measured by the ATLAS experiment *Physics Letters B, Vol 802, 135262* **2020**

Measurement of long-range two-particle azimuthal correlations in Z-boson tagged pp collisions at $\sqrt{s}$=8 and 13 TeV *Eur. Phys. J. **C80** no.1, 64* **2020**

Measurement of prompt photon production in $\sqrt{s_{NN}} = 8.16$ TeV $p + \mathrm{Pb}$ collisions with ATLAS *Physics Letters B, Vol 796, 230-252* **2019**

Future physics opportunities for high-density QCD at the LHC with heavy-ion and proton beams *CERN-LPCC-2018-07* **2018**

Prompt and non-prompt J/Ψ and $\Psi(2S)$ suppression at high transverse momentum in 5.02 TeV Pb+Pb collisions with the ATLAS experiment *Eur. Phys. J. **C78** no.9, 762* **2018**

Measurement of quarkonium production in proton-lead and proton-proton collisions at 5.02 TeV Pb+Pb collisions with the ATLAS detector *Eur. Phys. J. **C78** no.3, 171* **2018**

Evidence for light-by-light scattering in heavy-ion collisions with the ATLAS detector at the LHC *Nature Phys. 13, 852-858* **2017**

Z boson production in $p + \mathrm{Pb}$ collisions at $\sqrt{s_{NN}} = 5.02$ TeV measured with the ATLAS detector *Phys. Rev. C 92, 044915* **2015**

Measurement of differential J/ψ production cross sections and forward-backward ratios in $p + \mathrm{Pb}$ collisions with the ATLAS detector *Phys. Rev. C 92, 034904* **2015**

Measurement of charged-particle spectra in Pb+Pb collisions at $\sqrt{s_{\mathrm{NN}}} = 2.76$ TeV with the ATLAS detector at the LHC *JHEP* **1509 2015**

Measurement of the correlation between flow harmonics of different order in lead-lead collisions at $\sqrt{s_{NN}}$=2.76 TeV with the ATLAS detector *Phys. Rev. C 92, 034903* **2015**

Measurement of Long-Range Angular Correlation and Quadrupole Anisotropy of Pions and (Anti)Protons in Central $d + \mathrm{Au}$ Collisions at $\sqrt{s_{NN}} = 200$ GeV *Phys. Rev. Lett. 114, 192301* **2015**

A Centrality Detector Concept *Nucl. Instrum. Meth. A* **768**, *170* **2014**

Centrality categorization for $R_{p(d)+A}$ in high-energy collisions *Phys. Rev. C 90, 034902* **2014**

Measurement with the ATLAS detector of multi-particle azimuthal correlations in p+Pb collisions at $\sqrt{s_{NN}}$=5.02 TeV *Physics Letters B, Vol 725, 60-78* **2013**

Medium Modification of Jet Fragmentation in $\mathrm{Au}+\mathrm{Au}$ Collisions at $\sqrt{s_{NN}}=200\mathrm{GeV}$ Measured in Direct Photon-Hadron Correlations *Phys. Rev. Lett. 111, 032301* **2013**

Direct photon production in d+Au collisions at $\sqrt{s_{NN}}=200$ GeV *Phys. Rev. C 87, 054907* **2013**

Measurement of Z Boson Production in Pb+Pb Collisions at $\sqrt{s_{NN}}$=2.76 TeV with the ATLAS Detector *Phys. Rev. Lett. 110, 022301* **2013**

Observation of Direct-Photon Collective Flow in $\mathrm{Au}+\mathrm{Au}$ Collisions at $\sqrt{s_{NN}}=200\mathrm{GeV}$ *Phys. Rev. Lett. 109, 122302* **2012**

Suppression of Back-to-Back Hadron Pairs at Forward Rapidity in d+Au Collisions at $\sqrt{s_{NN}}$=200 GeV *Phys. Rev. Lett. 107, 172301* **2011**

Design, Construction, Operation and Performance of a Hadron Blind Detector for the PHENIX Experiment *NIM A, Vol 646.1* **2011**

Centrality dependence of charged hadron production in deuteron+gold and nucleon+gold collisions at $\sqrt{s_{NN}}$=200 GeV *Phys. Rev. C 77, 014905* **2008**

Leading contributor in above publications authored by the PHENIX and ATLAS collaborations; 995 total publications.

Conference Presentations

Multiple Partonic Interactions at the LHC Madrid, Spain - *November 2022*
Underlying Event Measurements at ATLAS

Quarks and Nuclear Physics Tallahassee, FL, USA [virtual] - *September 2022*
Upsilon-Underlying Event Correlations in pp Collisions at ATLAS

International Symposium on Multiparticle Dynamics Pitlochry, Scotland - *July 2022*
Missing Beauty

Quark Matter Krakow, Poland - *April 2022*
The ATLAS Upgrade Program

Hard Probes 2020 Austin TX, USA [virtual] - *June 2020*
Electroweak Probes: Experimental Overview

Quark Matter Venice, Italy - *May 2018*
Electroweak probes of small and large systems with the ATLAS detector

Quark Matter Chicago IL, USA - *February 2017*
Z Boson Production in 5 TeV pp, p+Pb and Pb+Pb Collisions with ATLAS

International Conference on High Energy Physics Chicago IL, USA - *August 2016*
Vector Boson and Charmonium Production in pPb and PbPb Collisions with ATLAS at the LHC

QCD at Cosmic Energies Chalkida, Greece - *May 2016*
Highlights of pA and AA studies with ATLAS

Hard Probes 2015 Montreal, Canada - *June 2015*
Jet suppression with ATLAS

EIC Users Meeting Stony Brook NY, USA - *June 2014*
A Concept for a Downstream Centrality (and more) Detector for EIC Experiments

Quark Matter 2014 Darmstadt, Germany - *May 2014*
Z Boson Production in p+Pb Collisions measured by the ATLAS Experiment

Rencontres de Moriond: QCD and High Energy Interactions La Thuille, Italy - *March 2014*
Hard Probes at ATLAS

Strangeness in Quark Matter Birmingham, UK - *July 2013*
ATLAS High-p_T measurements in lead-lead collisions at the LHC

Low-x Workshop Israel - *May 2013*
Probing Low-x With 2 Particle Correlations in $d + Au$ Collisions at PHENIX

International Workshop on Discovery Physics at the LHC South Africa - *Dec 2012*
Heavy Ion Physics with ATLAS

Hot Topics in Hot Matter Rehovot, Israel - *Oct 2012*
Electroweak Bosons in Heavy Ion Collisions

Quark Matter 2012 Washington DC, USA - *Aug 2012*
Study of correlations between neutral bosons and jets in lead-lead collisions at 2.76 TeV with the ATLAS detector

ICFP 2012 Kolymbari, Crete, Greece - *June 2012*
Heavy Ion Physics Highlights from ATLAS

Hard Probes 2012 Cagliari, Italy - *May 2012*
Measurements of the Z boson via the two-lepton channels in heavy ion collisions in ATLAS

Hard Probes 2010 Eilat, Israel - *Oct 2010*
Forward and Backward to Mid-Rapidity Correlations Measured in d+Au Collisions at $\sqrt{s_{NN}}$=200 GeV with PHENIX

Riken-BNL Workshop Upton NY, USA - *March 2010*
Probing Low x in d+Au and p+p Collisions in PHENIX

Quark Matter 2009 Knoxville TN, USA - *April 2009*
Single Particle Probes of d+Au Collisions in PHENIX

PANIC 2008 Eilat, Israel - *Nov 2008*
A Hadron Blind Detector Upgrade for the PHENIX Experiment

Invited Colloquia / Seminars

Nuclear Physics Colloquium Goethe-Universität/GSI Frankfurt/Darmstadt, Germany - *Feb 2013*
Heavy Ion Physics with ATLAS

Physics Colloquium University of Cape Town, Cape Town, South Africa - *Nov 2012*
Recent Results From Heavy Ion Collisions

Nuclear Physics Seminar Ben Gurion University, Be'er Sheva, Israel - *June 2012*
Electro-Weak Probes in Heavy Ion Collisions

Israeli Joint Nuclear Physics Seminar Rehovot, Israel - *Jan 2012*
Photons in Heavy Ion Collisions