Yingru Xu

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Department of Physics, Duke University
Durham, NC 27708

Education

Doctor of Philosophy in physics, Duke University, Durham, NC expected 2019

- Thesis: *Heavy flavor dynamics in ultra-relativistic heavy-ion collisions and Bayesian estimation of its transport coefficients*
- Supervisor: Prof. Steffen A. Bass

Bachelor of Science , Nanjing University, Nanjing, China Jul. 2013

- Thesis: *Application of Green's Function on Transport Propertied of Electrons in Infinite Carbon Chain*
- Supervisor: Prof. Bai-Gen Wang
- GPA: 95.8/100

Research Experience

Graduate Research Assistant Aug. 2013-present

Dept. of Physics, Duke University, Durham, NC

Supervisor: Steffen A. Bass

- Simulated event-by-event heavy flavor evolution in heavy-ion collisions within an improved Langevin framework, simultaneously described heavy meson experimental data at both RHIC and the LHC in different collision systems (p-Pb, Au-Au, Pb-Pb)
- Systematically constrained heavy quark transport coefficients by applying state-of-the-art Bayesian statistical analysis

Undergraduate Research Assistant Aug. 2012-Jun. 2013

National Lab of Solid Micro-structures, Nanjing University, China

Supervisor: Bai-Gen Wang

- Calculated the transport properties of electrons in ideal carbon nanotubes
- Investigated the quantum condensate and density of state properties in different nanostructures

Honors and Awards

- EPJ A Young Scientist Awards , sQuark Matter, Utrecht, the Netherlands Jul. 2017
- National Academic Awards the Ministry of Education, China Oct. 2012

- People's Scholarship the Ministry of Education, China Oct. 2011
- Distinguished Undergraduate of the year Nanjing University Nov. 2010

Teaching Experience

Teaching Assistant Aug. 2013-May 2015

Dept. of Physics, Duke University

- Grad-level courses: Statistic Mechanics, Quantum Mechanics
- Undergrad-level courses: Introduction to Mechanics, Introduction to Astronomy

PRESENTATION

1. **RHIC & AGS Annual User Meeting**, BNL June 2018

   Talk: Open heavy flavor transport models

2. **Quark Matter 2018**, Venice, Italy May 2018

   Poster: Data-drive analysis of the temperature and momentum dependence of the charm quark diffusion coefficient

3. **Heavy Flavor Workshop in High Energy Collisions**, LBNL Nov. 2017

   Talk: Data-drive analysis of the temperature and momentum dependence of the charm quark diffusion coefficient

4. **Fall meeting of the APS DNP**, Pittsburgh Oct. 2017

   Mini-symposium: Bayesian extraction of the heavy quark diffusion coefficient from RHIC and LHC heavy-ion Data

5. **QGP workshop in Institute of Nuclear Theory**, Seattle May 2017

   Talk: Heavy flavor dynamics from improved Langevin model

6. **Strangeness in Quark Matter 2017**, Utrecht, the Netherlands Jul. 2017

   Talk: Bayesian application on heavy quarks

7. **Quark Matter 2017**, Chicago Feb. 2017

   Talk: Data-driven analysis of the heavy quark transport coefficients

8. **Hard Probe 2016**, Wuhan, China Sep. 2016

   Talk: Data-driven analysis of the temperature and momentum dependence of the heavy-quark transport coefficients

9. **Quark Matter 2015**, Kobe, Japan Sep. 2015

   Poster: Open heavy flavor dynamics in pA collisions

10. **Hard Probe 2015**, Montreal, Canada Jul. 2015

    Talk: Heavy flavor dynamics in proton-nucleus collisions

SELECTED PUBLICATION

1. **Y. Xu**, S. A. Bass, P. Moreau, T. Song, M. Nahrgang, E. Bratkovskaya, P. Gossiaux, J. Aichelin, S. Cao, V. Greco, G .Coci, K. Werner, *"Cracking the difference of estimating heavy quark transport coefficients in a Quark-Gluon Plasma"*, arxiv: 1809.10734, submitted to Phys. Rev. C.
2. W. Ke, **Y. Xu**, S. A. Bass, *"A linearized Boltzmann-Langevin model for heavy quark tranport in hot and dense QCD matter"*, arxiv: 1806, 08848, accepted by Phys. Rev. C.
3. **Y. Xu**, J. E. Bernhard, S. A. Bass, M. Nahrgang and S. Cao, *"Data-driven analysis for the temperature and momentum dependence of the heavy-quark diffusion coefficient in relativistic heavy-ion collisions"*, Phys. Rev. C **97**, no. 1, 014907 (2018).
4. **Y. Xu**, P. Moreau, T. Song, M. Nahrgang, S. A. Bass and E. Bratkovskaya, *" Traces of nonequilibrium dynamics in relativistic heavy-ion collisions"*, Phys. Rev. C **96**, no. 2, 024902 (2017).
5. **Y. Xu**, M. Nahrgang, J. E. Bernhard, S. Cao and S. A. Bass, *"A data-driven analysis of the heavy quark transport coefficient"*, Nucl. Phys. A **967**, 668 (2017).
6. **Y. Xu**, S. Cao, M. Nahrgang, J. E. Bernhard and S. A. Bass, *"Data-driven analysis of the temperature dependence of the heavy-quark transport coefficient"*, Nucl. Part. Phys. Proc. **289-290**, 257 (2017).
7. **Y. Xu**, S. Cao, G. Y. Qin, W. Ke, M. Nahrgang, J. Auvinen and S. A. Bass, *" Heavy-flavor dynamics in relativistic p-Pb collisions at* $\sqrt{S_{NN}} = 5.02$ *TeV"*, Nucl. Part. Phys. Proc. **276-278**, 225 (2016).