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Swansea University

Lattice QCD - Non-zero temperature QCD

Mesons at non-zero temperature QCD

About me:

I am a Spanish PhD student who studied a physics degree at Universidad Autónoma de Madrid, in Spain. Moreover, I got a master's degree in Nuclear Physics in the same organization.

Related to physics, I am mainly focused on theoretical high energy physics, but I am opened to related areas such as condensed matter physics or statistical physics.

Besides physics, I have always liked engineering areas such as computer science or data analysis. Since my brother is an aerospace engineer, I also take an interest in fluid mechanics.

Outside academia, I am really interested in the video-game industry and studying social trends using data analysis.

I would describe myself as independent and open for new ideas. My curiosity is wide, facing any 'challenging' problem offers tremendous opportunities to learn.

Science/ Research information:

I am currently working in QCD at non-zero temperature using a lattice field theory approach. Using the lattice enables you to calculate non-perturbative physical observables related to the quark-gluon plasma. All of them require Monte Carlo simulations, as well as complex data analysis.

Data Intensive Skills and interests:

I know statistics and probability theory, as well as a wide range of mathematics.

I really like coding, my main languages being Python and C++. I also know a little bit of Javascript, PHP and SQL, therefore I have a little bit of knowledge of web programming and database administration.

During my first year as a PhD student in Swansea, I had to write my own code to fit non-linear functions to large amount of data. The code uses bootstrap iterations and implements a Nelder-Mead algorithm. It is parallelized using MPI to save time.

I know shell scripting, which I widely use to automate most everyday tasks. I am a big fan of Linux, my main work tool.

I am in contact with the machine learning community, being able to extrapolate all my knowledge to those fields of computer science.

You can check out my github account:

https://github.com/schavesgm

A webpage I wrote about MPI parallelization:

https://schavesgm.github.io/

Future goals and desires:

As an open minded and curious person, I would like to try different areas, related to computer science. Learning about what it is being done in industry will help me to guide my choices.