

Re: CPOD2024

Marek Gazdzicki <Marek.Gazdzicki@cern.ch>

Mon 2024-04-08 15:29

To: edward.shuryak@stonybrook.edu <edward.shuryak@stonybrook.edu>

Cc: Nu Xu <nxu@lbl.gov>; cpod-iac (CPOD International Advisory Committee) <cpod-iac@cern.ch>; Xin Dong <xdong@lbl.gov>; Volker Koch <vkoch@lbl.gov>

Dear Edward, All,

@Edward:

Thank you for your great service in the CPOD IAC. The workshop was started at the ECT Trento meeting in April 2024, and it has been 20 years since then! At this meeting, you, Peter Seyboth, and I decided to create the series. This was motivated by your and colleagues' predictions about the critical point and the NA49 observation of the signals of the onset of deconfinement ("horn" et al.). Many thanks for this.

Your previous seminal ideas motivated and guided the whole field of heavy-ion collisions. In particular, the search for quark-gluon plasma at SPS and then the study of its properties at RHIC and LHC. Thank you for this!

@All:

After 20 years, the primary CPOD workshops' goals have been reached. The data collection within the RHIC BES and SHINE 2D-scan programmes has been completed. The majority of key results have been published. The rest should be ready by the CPOD workshop at CERN in about two years from now. The answers to the original questions are:

- the NA49 results are confirmed,
- there is no convincing evidence of the critical point.

But the results are much broader. First, they underline our difficulties in quantitatively modelling heavy-ion collisions, even without including 'fancy' effects like the onset of deconfinement and the critical point. In particular, the emerging surprising effect of a large excess of charged-over-neutral kaons questions the validity of all our models based on the flavour symmetry rooted in QCD.

Because of this, it would be great to discuss the future of the CPOD workshops during the IAC meeting in Berkeley. We may consider discontinuing the series after the CERN workshop and discussing the new priority questions beyond the CPOD physics at new dedicated meetings.

Independently we should review and update the CPOD IAC memberships. Edward just left the IAC. By the end of this year, I will hand over SHINE to my younger colleagues and do this with my other activities. Thus, after the Berkeley workshop, I will resign from the CPOD IAC membership.

I propose to invite Maja Mackowiak-Pawłowska (NA49, SHINE, experimental measurements of fluctuations) and Roberta Araldi (NA50, NA60 and NA60++, charmonia and dileptons) to join the IAC. They are also organizers of the CERN workshop.

I am looking forward to seeing you in Berkeley

Best regards

Marek

 From: Edward Shuryak <edward.shuryak@stonybrook.edu>

Sent: 05 April 2024 17:51

To: Marek Gazdzicki

Cc: Nu Xu; cpod-iac (CPOD International Advisory Committee); Xin Dong; Volker Koch

Subject: Re: CPOD2024

Hi everybody,

(I joined LAST MEETING at about 11:20 EST, I had a class which ended at that time in another bilding. So I did not say hi to friends, etc, as usual. SORRY.)

By the end of the meeting, when Nu observed that I joined, he kindly gave me a chance to say something important. He was right but I was not really prepared. I DO SO NOW

In short, I decided to resign from this CPOD advisory committee. I also would not come to Berkeley meeting in May.

I wrote a large book, 600 pages, ``Quark-gluon plasma, heavy ion collisions and hadrons, in World Scientific. Two previous books were in 1985 and 2004. It is my final summary of heavy ion physics as I know it. I just got the sample book two days ago.

In the last two years I wrote, with Ismail Zahed, about a dosen papers about bridging hadronic spectroscopy and partonic (light cone) observables. This is the direction of my current work. It is quite technical but I hope it is relevant to EIC.

Let me elaborate briefly on my history in respect to physics / CPOD meetings. In 1998 I had two basic papers. The first (by myself) pointed out a relation of susceptibilities to event-by-event fluctuations. For the second (with Misha and Krishna) I suggested the Beam Energy Scan. With Marek and others, we started CPODs along those lines.

Next 20 or so years witnessed BES and BESII programs, as well as BEST group. I was not involved in any of these collaborations.

Just before covid years, I wrote 3 papers with Torres
(1805.04444, 1910.08119 , 2005.14216)
and 2 with (my student) DeMartini
(2007.04863 , 2010.02785)

The idea was, continuing on the original papers, that the 4-nucleon correlations come from certain diagrams giving modification of nuclear forces near CP and responsible for LOCAL CLUSTERING of 4 nucleons. Global kurtosis is just a reflection of that. These papers used a variety of theory tools, from classical molecular dynamics, to semiclassical ``fluctons", to quantum path Monte Carlo, quantifying PRECLUSTERING in the 4-nucleon channel, near CP and far from it.

Responce to them can be normalized to my other papers. Let me say that overall I wrote about 400 papers and got nearly 40000 citations, so average per my paper is about 100. (Of course, some are 1000+ and some next to nothing.) All 3 papers with Torres got about a 100 TOGETHER, and all 4 with my student basically none. Nobody followed on any of this physics, even if cited the papers.

Not a word about them is perhaps going to be said at the coming Berkeley meeting.

I do not have any time to waist anymore. Consider these papers to be my final contributions in the CPOD direction. Since I also was not active in meeting organization, I have no business to sit in this Advisory Committee.

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