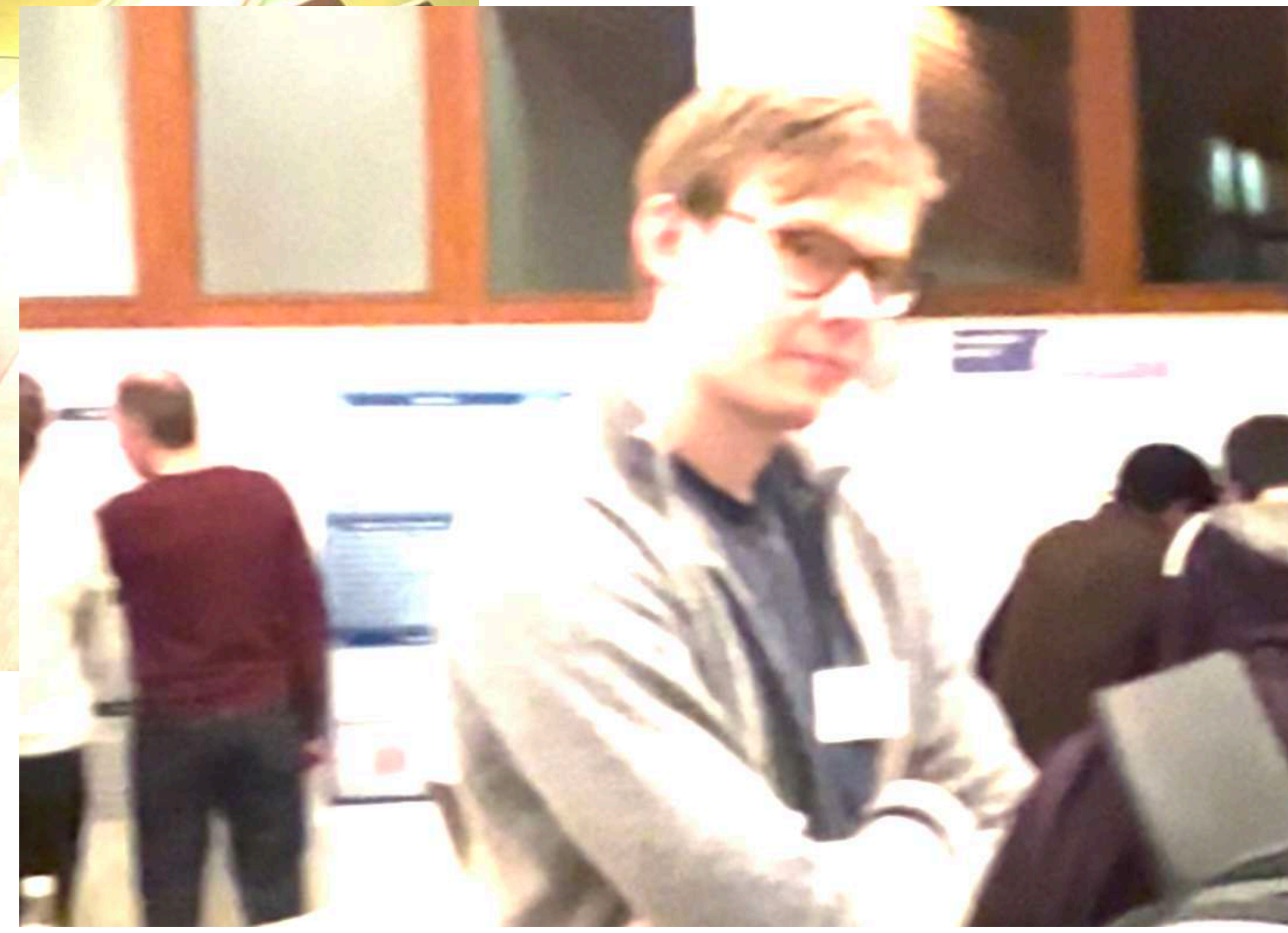


Strategic discussions

CPPS Retreat
Fr. 15.2.2024

Before we start



Outline

-
- **General Strategic discussion: Research, Teaching, Structural Issues**
 - Concrete: potential projects, dates
 - Excellence strategy: CPPS and/or HEP with Bonn, Dortmund & TP1 with Bonn, Dortmund, Jülich

CPPS: Research

- What can we do to enhance the Cooperation between the Pis?
- ... in particular between experiment and theory?
- Do we want/have a joint strategy concerning CPPS research?
- ... if yes, what is it, and how do we get to it?
- Is the balance of hardware vs. analysis vs. theory appropriate?
- To what extend should we focus our research?

CPPS: Teaching

- What can we do to get more Bac/Mas Students into particle physics?
- Can we improve our Focus Line “Particle Physics” of the Physics Master?
- What is the role of the “Non-Physics” curricula (Nano, Quantum, Med)?
- What are the offers to PhD students and PostDocs regarding qualification?

CPPS: Structural issues

- Do we consider the Lab-infrastructure sufficient, in particular in view of the Excellence-Cluster perspective
- Do we envisage a participation in INCYTE? If yes, at what time scale?
- ... If no, can the ENC infrastructure be made appropriate?
- Should we create a common fund for CPPS?
- ... if not from central funds, would we try to contribute for our own funds?
- From this: Would we create a fellowship program (Master/PhD level) to make CPPS more attractive?

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Poster session

- Determination of CKM elements V_{cb} and V_{ts}
- Wizard validation for $t\bar{t}Z$
-

Talk by Markus C.

Talk by Alex L.

Parallel sessions

-
1. Advertise Master course internationally- latest in March? - digital master day?
 2. Common outreach activity for “Offene Uni” 25.5.2024
 - 3. Optimise our position for the excellence strategy - 22.8. deadline, referee process Oct. '24 - Feb. '25**
 4. Medical Physics seems to push forward - is this the right way to enhance our student numbers? Is it the right time? Other more effective measures?
 5. What else?

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Color meets Flavor

RA1,2



	UP, DOWN	STRANGE	CHARM	BOTTOM	TOP	HIGGS	AXION
Experiments	ELSA (Bonn) AMBER(CERN)		LHCb (CERN) Belle II (KEK)		ATLAS (CERN)		IAXO (DESY)
Experimental Groups	Bonn, Dortmund, Siegen		Bonn, Dortmund		Bonn, Dortmund, Siegen	Bonn, Siegen Dortmund	Bonn, Siegen
Theoretical Groups	Bonn, Jülich		Siegen, Dortmund, Bonn, Jülich		Bonn, Dortmund, Siegen	Bonn, Siegen	Bonn, Dortmund

Fördert Spitzenforschung an deutschen Universitäten

... Ziel, den deutschen Wissenschaftsstandort im internationalen Wettbewerb nachhaltig zu stärken...

... die Profile der Universitäten zu schärfen ...

Identify projects/activities in order to strengthen/proof our proposal before 22.8 - before Oct.

Color-Meets-Flavor Bad Honnef Physics School - Bonn, Dortmund, Siegen

March 17 - 22, 2024

Scientific organizers: Prof. Johannes Albrecht (TU Dortmund), Prof. Florian Bernlochner (Universität Bonn), Prof. Alexander Lenz (Universität Siegen)

Physikzentrum Bad Honnef, Germany

Quark flavor physics studies the transitions of quarks via the weak interaction. Since quarks carry a color charge they do not exist as free particles, but are bound into colorless hadrons. Thus for a clear identification of the fundamental quark transitions a control of the hadronic effects is indispensable - color meets flavor.

Review lectures will provide a broad overview over current highlights of the field, accompanied by hands-on sessions on detector development and deep learning based data analysis as well as inspiring evening lectures.

[Link for more description](#)



Planned lecture programme:

- Theoretical Foundations of Flavor Physics (A. Petrov, University of South Carolina)
- Experimental Flavor Physics (M.H. Schune, UC Lab Orsay)
- Non-perturbative Methods for QCD (M. Hansen, Edinburgh, tbc)
- Models for Baryogenesis (M. Escudero, CERN, tbc)
- BSM Models for flavor physics (G. Isidor, University of Zurich)
- Build your own particle detector
- Hands on session on deep learning

Evening lectures:

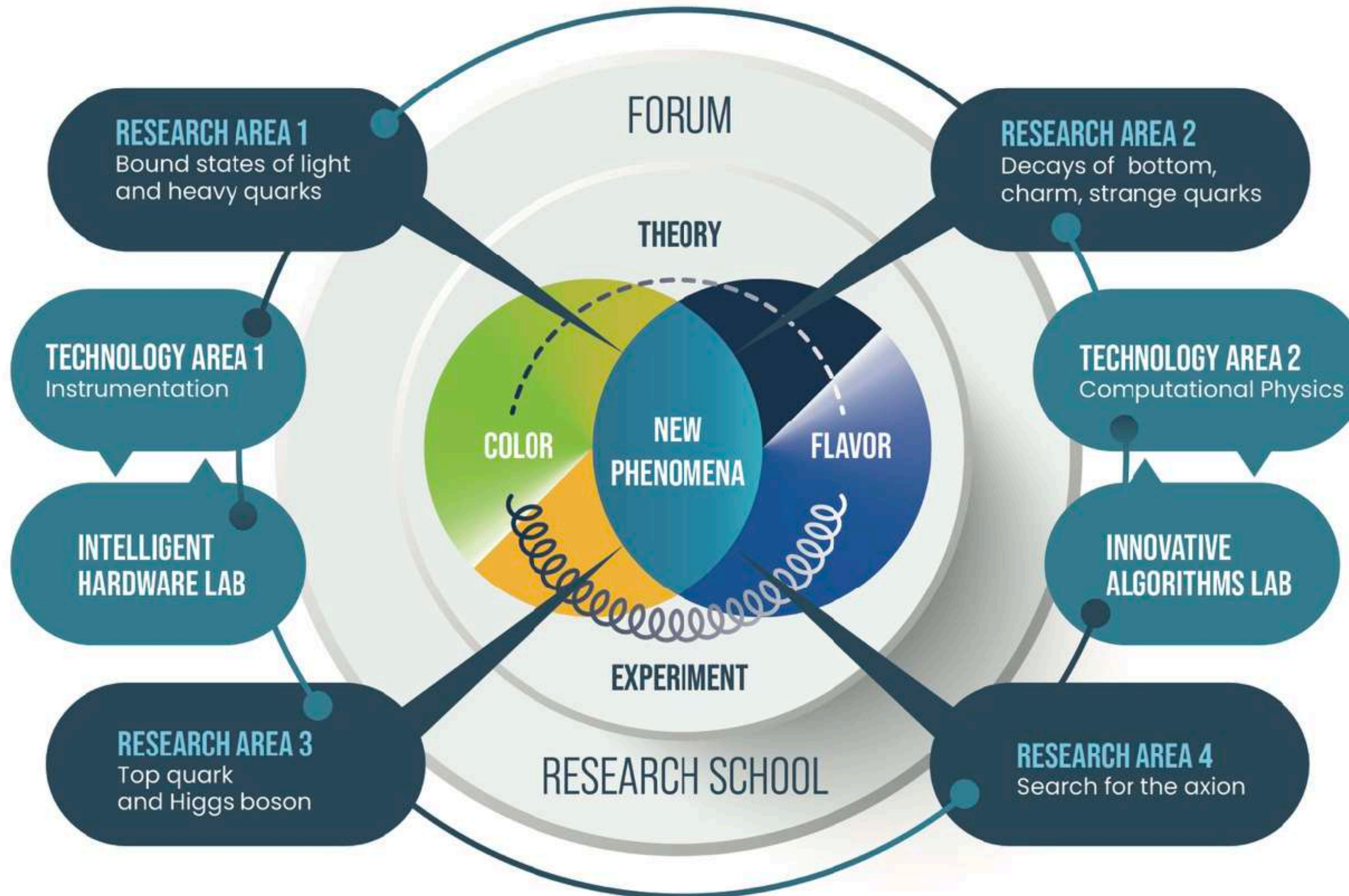
- Guy Wilkinson (Oxford)
- Andrzej J. Buras (Munich)

Lifetimes of b -hadrons and mixing of neutral B -mesons: theoretical and experimental status

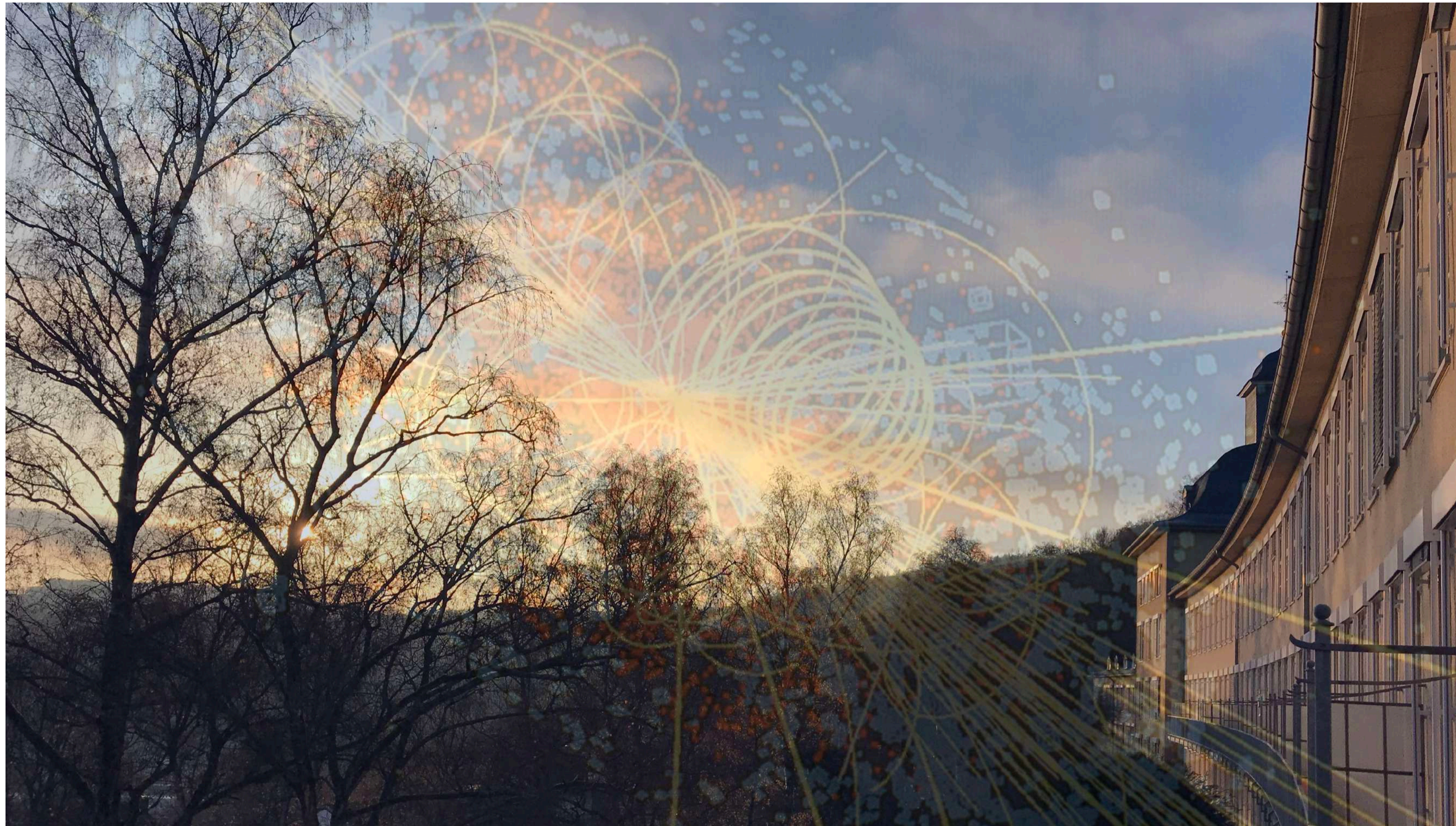
Johannes Albrecht, Florian Bernlochner, Alexander Lenz, Aleksey Rusov (Feb 6, 2024)

e-Print: [2402.04224](#) [hep-ph]

any CPPS ideas?



Outlook



Center for **P**article **P**hysics **S**iegen

Outline

9:15- 9:45 General Strategic discussion:

**10 min Research,
10 min Teaching,
10 min Structural issues**

9:45 - 10:05 Concrete:

**15 min potential projects,
5 min dates**

10:05 - 10:25 Excellence strategy:

**20 min CPPS
and/or**

HEP with Bonn, Dortmund & TP1 with Bonn, Dortmund, Jülich