2021: General news and plans

A. Guskov

CDR preparation

- Jan 18: CDR was presented by A. Guskov at the meeting of the JINR PAC for Particle Physics

https://indico.jinr.ru/event/1705/

- We have preliminary recommendations from the PAC and they are quite positive

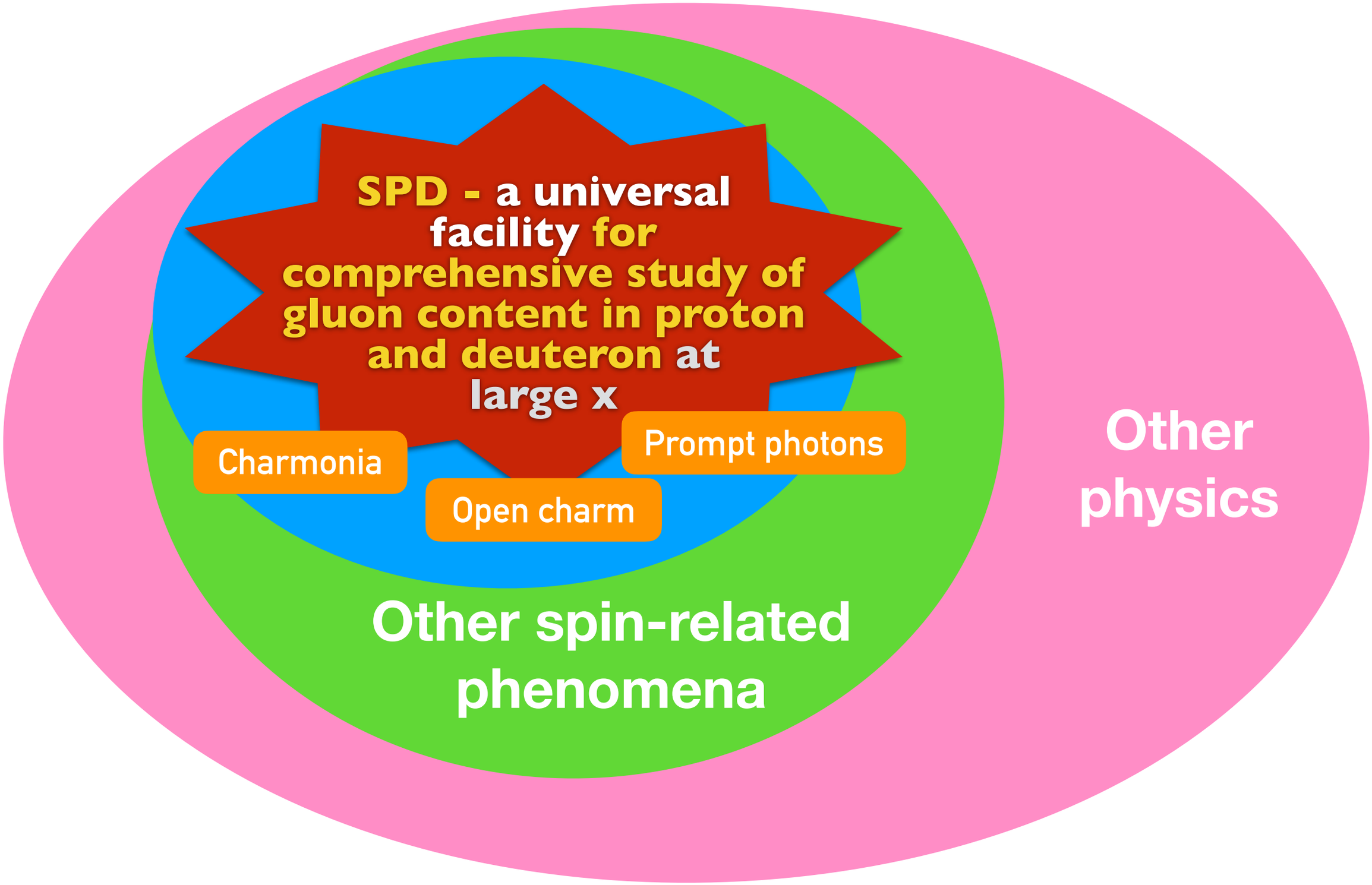
- We introduce some last-minute changes to the CDR and in a few days it will be submitted to arxiv

PAC recommendations (preliminary)

The PAC heard the presentation of the Conceptual Design Report (CDR) of the SPD experiment made by A. Guskov. The main goal of the experiment is to study the polarized gluon structure of proton and deuteron in the production of charmonium, open charm and direct photons. At its initial stage, SPD is supposed to focus on various unpolarized and spin-dependent effects in interactions of protons, deuterons and light nuclei. The SPD facility is meant to be a universal 4π-detector for registration and identification of secondary particles at high luminosity.

Recommendation. The PAC thanks the SPD (proto-)collaboration for the preparation of the comprehensive CDR and recommends the NICA management appoint an appropriate detector advisory committee (DAC) for a thorough review of the CDR and its subsequent evolution into an SPD technical design report (TDR). The PAC encourages the team to pursue every effort to form an international collaboration, find adequate resources and attract students and young scientists.

Physics program



Physics program

arXiv:2011.15005 ***Accepted*** *for publication to Progress in Particle and Nuclear Physics Journal*

On the physics potential to study the gluon content of proton and deuteron at NICA SPD

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Physics program

Physics of Elementary Particles and Atomic Nuclei. Theory

Experiments with polarized proton and deuteron beams at NICA collider

Эксперименты с поляризованными пучками протонов и дейтронов на коллайдере NICA

V. V. Abramov[A], *V.A. Baskov*[R], *O.D. Dalkarov*[R], *R. El-Kholy*[I], *A. Galoyan*[Z], *J. Haidenbauer*[d], *E. Kokoulina*[a,S], *I.A. Koop*[L,M,N], *V.P. Ladygin*[Z], *A. B. Larionov*[J], *A.I. L'vov*[R], *A.I. Milstein*[L,M], *V.A. Nikitin*[Z], *N. N. Nikolaev*[K], *A. S. Popov*[L], *V. V. Polyanskiy*[R], *J.-M. Richard*[D], *S. G. Salnikov*[L], *P. Yu. Shatunov*[L,M], *Yu. M. Shatunov*[L,M], *O. V. Selyugin*[Q], *M. Strikman*[Y], *F. E. Tomasi-Gustafsson*[B], *V. V. Uzhinsky*[X], *Yu. Uzikov*[a,b,c1], *Qian Wang*[E], *Qiang Zhao*[F,G],

Excellent seminar by Yu. Uzikov with interesting discussion (Jan 20)

https://dlnp.jinr.ru/ru/meetings/zapisi-seminarov/1226-yurij-uzikov-predlozheniya-eksperimentov-dlya-pervoj-fazy-issledovanij-po-spinovoj-fizike-na-kollajdere-nica-spd

Activities

Detector optimization

Reconstruction algorithms

Main physics channels

Theoretical predictions

Models test

Possible impact

First-stage physics

Radiation conditions

Online filter

New approaches

A. Tkachenko

Activities

E. Kuznetsova +

K. Shtejer

Detector optimization

A. Maltsev

A. Gribovski+

V. Andreev

Reconstruction algorithms

I. Denisenko

A. Rymbekova

Main physics channels

N. Trunov

G. Golovanov

A. Verkheev

M. Nefedov

A. Shipilova

Theoretical predictions

A. Karpishkov

N. Trunov

Models test

A. Datta

Possible impact

V. Uzhinsky

A. Galoyan

First-stage physics

A. Gridin

Radiation conditions

M. Zhabitsky

Online filter

E. Rezvaya

New approaches

SPD Physics & MC meeting 27.1.2021, video only

		TALK		SPEAKER
10.00	**1**	**General news and plans**	30’	**A. Guskov**
10:30	**2**	**Software: plans for 2021**	30’	**A. Zhemchugov**
11:00	**3**	**ALFA prototype at SPD: simulation using FairMQ and DDS**	30’	**A. Belova**
11:30	**4**	**SPD local polarimetry with pi0**	30’	**K. Shtejer**
12:00	**5**	**Single spin asymmetries in D-meson production at SPD NICA in the CGI GPM**	30’	**A. Karpishkov**
12:30	**6**	**Future SPD Measurements in the Context of Global Analysis**	30’	**A. Datta**
13:00	**7**	**Occupancies and resolutions for projective vs perpendicular geometry of SPD ECAL**	30’	**A. Maltsev**
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14:00	**7**		30’	
14:30	**8**		30’	
15:00	**9**		30’	
15:30	**10**		30’	
16:00	**11**		30’	