

STRONG2020 NA2-Small-x: Physics at the LHC and future DIS experiments - Interim Report
September 16th 2020



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 824093

Introduction: RPI (first 18 months)

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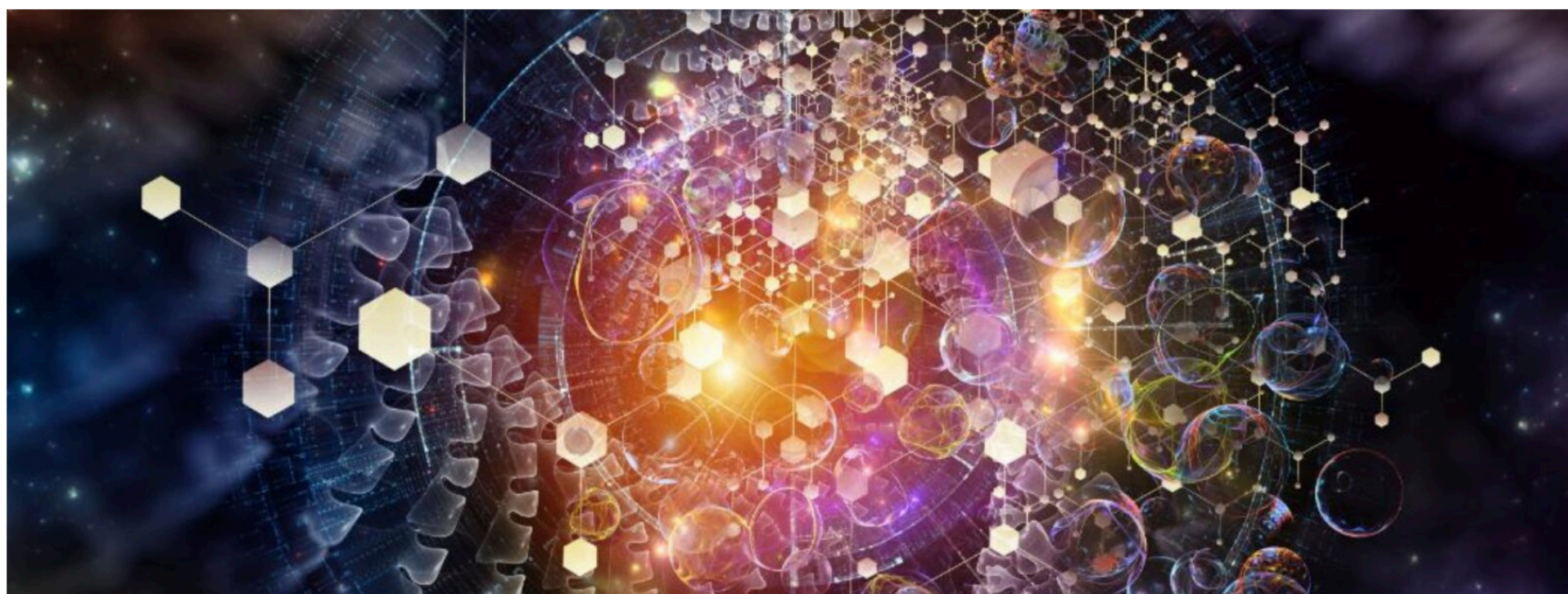
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Brief reminder:

- **STRONG2020: July 2019 - June 2023** (but written in December 2017).
- **NA2-Small-x: Physics at the LHC and future DIS experiments: 15 institutions** (Boris Blok from Technion contacted lately).
- Meeting at ECT* planned for last July, COVID situation ⇒

SATURATION AND DIFFRACTION AT THE LHC AND THE EIC



28 June 2021 — 02 July 2021

ECT* - Villa Tambosi

- **BGU**: Ben-Gurion University of the Negev, Beer Sheva, Israel (M. Lublinsky).
- **CNRS**: École Polytechnique, Université Paris-Saclay, Palaiseau, France (C. Marquet, S. Munier) + IPhT, Commissariat à l'énergie atomique, Saclay, France (F. Gelis, E. Iancu, G. Soyez) + **Laboratoire de Physique Théorique**, Université Paris-Saclay, Orsay, France (S. Wallon).
- **Consenza**: **Università della Calabria**, Cosenza, Italia (A. Papa).
- **CTU**: Czech Technical University, Prague, Czech Republic (J. Cepila, G. Contreras).
- **ECT***, **Trento**, Italy (D. Triantafyllopoulos).
- **Firenze**: Università de **Firenze**, Italia (D. Colferai).
- **Granada**: Universidad de Granada, Spain (J. L. Albacete).
- **Groningen**: University of Groningen, The Netherlands (D. Boer).
- **Jyväskylä**: University of Jyväskylä, Finland (T. Lappi, H. Paukkunen, K. J. Eskola).
- **Krakow INP**: Henryk Niewodniczański **Institute of Nuclear Physics**, Krakow, Poland (K. Golec-Biernat, K. Kutak, S. Sapeta).
- **Krakow JU**: Jagiellonian University, **Krakow**, Poland (Leszek Motyka, Michal Praszalowicz).
- **Madrid**: **Universidad Autónoma de Madrid**, Spain (A. Sabio Vera).
- **Regensburg**: **University of Regensburg**, Germany (G. Chirilli).
- **Santiago**: **Universidade de Santiago de Compostela**, Spain (N. Armesto).
- **Warsaw**: National Centre for **Nuclear Research**, Warsaw, Poland (T. Altinoluk, L. Szymanowski).

Financial support:

- **Initial idea:** Santiago and Jyväskylä keep the travel money and pay travel expenses to all institutions (beneficiaries and non-beneficiaries).
- **Changes** agreed with participants due to the impossibility to pay travel expenses of other beneficiaries (we can pay non-beneficiaries, though).
- **Amendment** to the Grant Agreement informed on September 11th 2020, to be signed.

Institution	Original	Final
CNRS (Polytechnique, LPT Orsay, Saclay)	0	12000
ECT*	0	2000
Firenze	0	2000
Jyvaskyla	32000	16000
Krakow INP	0	6000
Krakow JU	0	4000
Regensburg	0	2000
Santiago de Compostela	32000	16000
NCBJ Warsaw	0	4000
Total	64000	64000

Report (I):

I. Explanation of the work carried out and overview of progress:

I.1 Project objectives

I.2 Progress made

OBJECTIVES OF WP13 (FROM ANNEX I)	PROGRESS MADE DURING THE REPORTING PERIOD
Task 1: Nuclear PDFs.	
Task 2: New NLO-based precision phenomenology in CGC and BFKL.	
Task 3: TMDs at small x .	
Task 4: Multi-particle correlations & Thermalization.	

I.3 Highlights

Report (II):

2. Use of resources

2.1 Use of financial resources

2.2 Use of human resources

Beneficiary number	Organization legal name <i>(in italics the Research Units)</i>	Short name	Human effort from Annex I <i>(person-months for 18 months)</i>	Actual human effort in the reporting period <i>(person-months)</i>
1	<i>Centre National de la Recherche Scientifique</i>	CNRS	4,50	
20	<i>Universidad de Santiago de Compostela</i>	USC	2,25	
23	<i>Jyvaskylan Yliopisto</i>	JYU	2,40	
37	<i>The Henryk Niewodniczanski Institute of Nuclear Physics, Polish Academy of Sciences</i>	IFJ PAN	4,50	

2.3 Use of other resources

Report (III):

3. Deviations from Annex 1 (Description of Action) and Annex 2 (Estimated budget for Action) (if applicable)

3.1 Deviations from planned objectives and tasks, and their impact on the progress of the work package

3.2 Deviations between actual and planned person months

Report (IV):

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D13.1	NPDFs	23 - JYU	Report	Public	48
D13.2	Resummed NLO cross sections	1 - CNRS	Report	Public	36
D13.3	TMD factorization	37 - IFJ PAN	Report	Public	48
D13.4	Initial vs final state correlations	20 - USC	Report	Public	36

4. Deliverables and milestones tables

4.3 Deliverable reports (description)

MS11	Reweighting of nPDFs including new LHC data	WP13	20 - USC	24	Publications and presentations in conferences, and software released and validated by a user group
MS12	Dipole cross section from resummed JIMWLK evolution	WP13	20 - USC	24	Publications and presentations in conferences, and software released and validated by a user group
MS13	TMD factorization at small x for 3 final-state particles	WP13	20 - USC	24	Publications and presentations in conferences
MS14	Completion of the calculation of multi-particle correlations in the dilute limit of the CGC	WP13	20 - USC	24	Publications and presentations in conferences

Conclusions:

Your input is required

THANK YOU!!!



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