ECT*
EUROPEAN CENTRE
FOR THEORETICAL STUDIES
IN NUCLEAR PHYSICS AND RELATED AREAS

FONDAZIONE
BRUNO KESSLER

ONLINE Workshop

Saturation and Diffraction at the LHC and the EIC

June 29 – July 1, 2021 on ZOOM Platform

Abstract | Main Topics

The general scientific **goal of this workshop is related to QCD at high gluon densities and diffraction at the Large Hadron Collider (LHC) and the future Electron-Ion Collider (EIC)** to be built in the US at BNL.

The goals of the workshop are twofolds. We intend to define the best observables sensitive to BFKL resummation effects at low x and the way to see saturation at the LHC and the EIC. Many LHC data have been accumulated in the different experiments, and it is also worth to explore the difference between the general ATLAS and CMS experiments and the specificities of Alice and LHCb allowing to run at lower pile up or with a lower cut on track momentum. The complementarity between the different experiments is an important tool to be discussed in order to reach the best possible sensitivity to saturation effects. Related to this topic is the important aspect of building the best detector possible at the EIC to be sensitive to these effects (by measuring hadrons in the very forward region as an example) since it is now time to define the detectors for the EIC.

The second topic deals with diffraction at the LHC and the EIC and a better understanding of the Pomeron models and structures. Following the experience at HERA and the Tevatron, it is useful to define the best possible measurements to be performed at the lHC and then the EIC to get a better insight into diffraction. Measurement different productions of jets, photons, vector mesons and disentangling these measurements from survival probability effects is crucial.

Keynote speakers

Nestor Armesto, Cristian Baldenegro, Paul Caucal, Giovanni Antonio Chirilli, Irais Bautista Guzman, Yoshitaka Hatta, Or Hen, Dmitri Ivanov, Piotr Kotko, Georgios Krintiras, Tuomas Lappi, Anh Dung Le, Cyrille Marquet, Evgenij Martynov, Evgenij Martynov, Dmitri Melnikov, Leszek Motyka, Murilo Javier Quijada Alberto, Timothy Raben, Christophe Royon, Farid Salazar, Anna Stasto, Zhoudunming Tu

Organizers

Christophe **Royon** (University of Kansas), Agustin Sabio Vera (University Autonomy de Madrid),
Soeren **Schlichting** (University of Bielefeld), Abhay **Deshpande** (Stony Brook University),
Gregory **Soyez** (IPhT Saclay), Martin **Hentchinski** (Universidad de las Americas Puebla)

Director of the ECT*: Professor Gert **Aarts** | The ECT* is part of the Fondazione Bruno Kessler.
The Centre is funded by the Autonomous Province of Trento, funding agencies of EU Member and Associated states, and by INFN-TIFPA and has the support of the Department of Physics of the University of Trento.

For virtual organization please contact: ECT* Secretariat - Villa Tambosi - Strada delle Tabarelle 286 | 38123 Villazzano (Trento) – Italy |
Tel.: +39-0461 314723, E-mail: staff@ectstar.eu or visit http://www.ectstar.eu