

ECT* Workshop: New Observables in Quarkonium Production (Quarkonium2016)

Sunday 28 February 2016 - Friday 4 March 2016

ECT*

Scientific Programme

Quarkonium production in pp, pA and AA collisions: where do we stand ?

Progress in QCD correction computations

NRQCD non-perturbative matrix elements fits: impact of the excited states

Survey on cold nuclear matter effects: initial vs. final state effects & ground vs. excited states

Survey on hot nuclear matter effects: initial vs. final state effects & ground vs. excited states

TMD factorisation and associated quarkonium production at the LHC

TMD factorisation: constraints on the final-state colour, evolution, QCD corrections

Extraction of linearly polarised gluon in unpolarised proton at the LHC: the case of associated quarkonium production

Experimental status of associated quarkonium production studies at the LHC, Tevatron and RHIC

Excited-quarkonium production in pA and AA collisions

Experimental status: LHC, RHIC and fixed-target data

Theoretical status: explaining fixed-target, RHIC and LHC data coherently (nuclear absorption, colour screening, energy loss phenomena, low x effects, recombination effects)

Relating pA and AA observations

Quarkonium-pair production: when TMD meets QGP

Quarkonium pair production and Double parton scattering

Double Parton Scattering in proton-nucleus and nucleus-nucleus collisions

Prospects for Quarkonium pair production studies in heavy-ion collisions at the LHC

Experimental requirements for forthcoming measurements

LHC & RHIC prospects

Existing fixed-target facilities (COMPASS, Fermilab)

Proposed facilities (EIC, LHeC, AFTER@LHC)

Summary and outlooks

Experimental and theoretical "to do list"

How to bridge the gap between heavy-ion and spin theoretical tools

How to bridge the gap between heavy-ion and spin experimental studies