

**Workshop on
"Photoproduction at collider energies:
from RHIC and HERA to the LHC"**

ECT*, Trento

15th - 19th Jan. 2007

Organizers:

**G. Baur (IKP Juelich), D. d'Enterria (CERN), S. Klein (LBNL),
J. Nystrand (Univ. Bergen), M. Strikman (Penn State Univ.)**

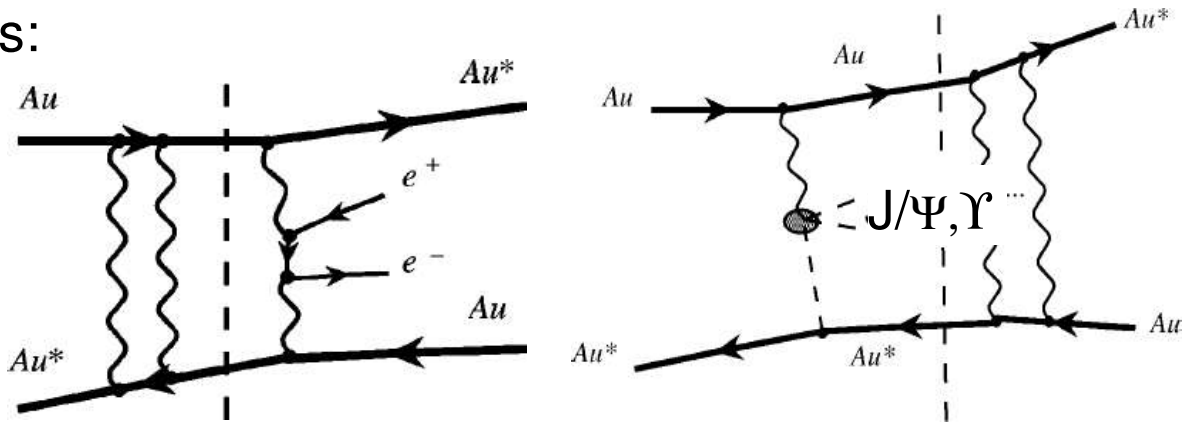
Topics of the workshop

- What will we be dealing with here this week ?
 - ♣ “Photoproduction@colliders” \equiv high-energy photon-induced processes.
 - ♣ **Diffractive** scattering \approx collisions involving at least 1 hadronic object and a **colorless** (γ , Pomeron) exchange with $Q^2 \sim 0$ leading to particle production with a **rapidity-gap(s)**
 - ♣ Also: pure QED (gamma-gamma) processes.
- 31 talks: Theoretical (16) and experimental (15) results.
- Processes:
 - 13 talks – AA e.m. (“ultraperipheral”) colls.: $A A \rightarrow \gamma A \rightarrow X$
 - 7 talks – Deep-inelastic scattering (DIS): $e p \rightarrow \gamma p \rightarrow X$
 - 5 talks – Two-photon processes: $A A \rightarrow \gamma \gamma \rightarrow X'$, $p p \rightarrow \gamma \gamma \rightarrow X$
 - 4 talks – pp (ppbar), pA electromagn. scatt: pp (ppbar), $pA \rightarrow \gamma p$ (pbar), $\gamma A \rightarrow X$
 - 2 talks – General

“Diagrammatic” examples

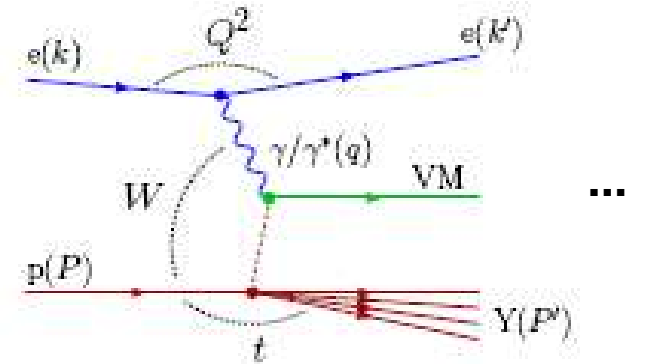
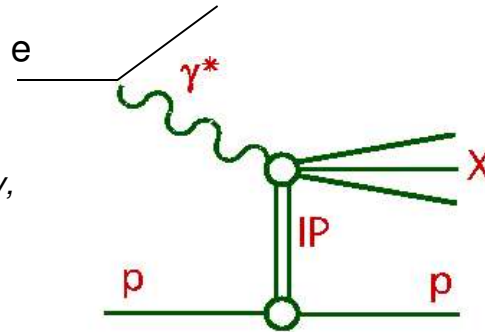
➤ $\gamma\gamma, \gamma A$ UPC processes:

[Frankfurt, Strikman, Vogt, Gurbonov, Silvermyr, d'Enterria, Scapparone, Schicker, Lourenco, Ramalhet, Baur, Machado, Nystrand, Baltz, Yilmaz, ...]



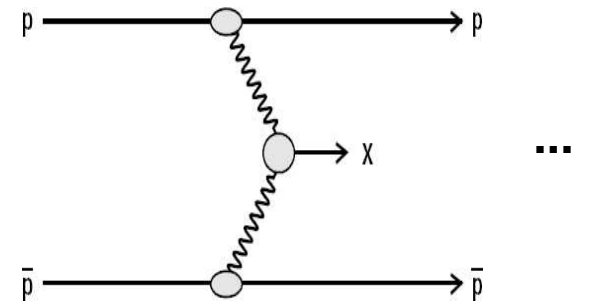
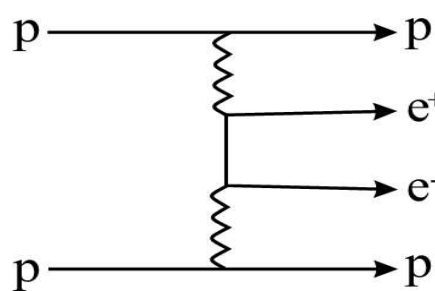
➤ DIS processes:

[Nachtmann, Klasen, Levonian, Brodsky, Nagy, Valkarova, Kowalski, Savin, ...]



➤ $\gamma\gamma, \gamma p$ (p, pbar beams):

[Hamilton, Piotrkowski, Dreyer, Engel, ...]



Topics (cont'd) and “technical” details

- Data from accelerators:
 - ♣ AA electromag. (aka. “ultraperipheral”) collisions:
SPS (NA60), RHIC (PHENIX, STAR), LHC (CMS, ALICE, ATLAS)
 - ♣ Deep-inelastic scattering (DIS): HERA (H1, ZEUS)
 - ♣ pp (ppbar), pA electromagnetic collisions: Tevatron (CDF), LHC (CMS)
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- Please **upload your talk and “long-abstract”** in the agenda web page:

<http://indico.cern.ch/conferenceDisplay.py?confId=9422>

- **Meals:**

Lunch at ECT* (bring your tickets)

Dinner at different local restaurants (reception tonight at ECT*, “Orso Grigio” banquet, “La Baracca”)

PLEASE SIGN EVERY DAY WHEN ARRIVING AT THE ECT*

Goals of the workshop

- Goals of the workshop:
 - Present **current** theo-exp. **state** of high-energy photoproduction
 - Present **near future** theo-exp. **prospects** of high-energy photoproduction
 - Identify **key (exp.,th.) physics** issues
 - **Share** techniques/experiences/knowledge among the **~3 communities**: UPC, DIS, pp(pbar), and between experiment-theory
- Ample time for discussion during conference and in the afternoon (>17:00)