Projeto Doutorado
(atualizações)

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Progresso

Instalação e uso do MadGraph

- MadGraph5_aMC@NLO v3.5.0.alpha with gamma-UPC v1.0
- https://hshao.web.cern.ch/hshao/gammaupc.html
- tutorial: https://cp3.irmp.ucl.ac.be/projects/madgraph/

Estudo do trabalho “gammaUPC”, de SHAO e D’Enterria

- https://doi.org/10.1007/JHEP09(2022)248 (2207.03012 - ArXiv)

Trabalho gammaUPC

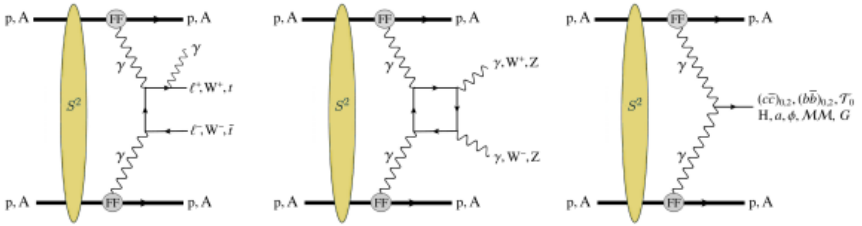

Figure 1. Typical exclusive $\gamma\gamma$ collision processes in UPCs of proton and ions (with form factors FF and survival probabilities S^2) that can be automatically generated with the `gamma-UPC` code: t-channel charged particle pair production with final-state photon radiation (left), box diagrams for diboson production (center), and resonant production of SM and BSM spin-even states (right).

Geração de eventos no MadGraph5_aMC@NLO v2.6.6

A partir de geração de eventos de colisões ultraperiféricas de p-p, p-A e A-A, são realizadas predições de seções de choque para “total photon-fusion” no LHC e FCC para:

- spin-even (scalar or tensor) resonances;
- pares de mésons J/ψ ;
- bósons W, Z e quark *top*;
- Axionlike particles;
- massive gravitons;

Os cálculos das seções de choque dos processos acima são feitos considerando e comparando os Form Factors:

- EDFF - eletric dipole form factor
- ChFF - charge form factor

$\gamma\ \gamma > t\ t\sim$

run_03	a a 7000.0 x 7000.0 GeV	tag_1	0.0003694 ± 2.3e-06	1000	parton madevent	LHE MA5_report_analysis1
					hadron MA5	
run_04	a a 7000.0 x 7000.0 GeV	tag_1	0.0003712 ± 1.7e-06	1000	parton madevent	LHE MA5_report_analysis1

Process: $\gamma\gamma \to t\bar{t}$	gamma-UPC σ_{LO}	
Colliding system, c.m. energy	EDFF	ChFF
p-p at 14 TeV	0.164 fb	0.238 fb

$\gamma\,\gamma > W^+\ W^-$

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Trabalho no ECAL - PFG

- semanas de Shifts: 10 a 16 de abril; (week 18, maio não foi confirmada)
- Leitura do material introdutório;
  - https://ecal-pfg.web.cern.ch/
  - tutorial: https://indico.cern.ch/event/1186217/
    - Connection to P5 ECAL machines:
- Relatórios de shifts anteriores:
  - https://indico.cern.ch/event/1267489/