EXAMPLES OF FEYNMAN DIAGRAMS WITH THE TIKZ PACKAGE

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Some example uses of the PGF/TikZ package for Feynman diagrams.
Not necessarily the most efficient method!
PGF/TikZ code: http://sourceforge.net/projects/pgf/
Source code for these diagrams: http://www.kiragrogg.com/interests/commands/TikzFeynmanExamples.zip

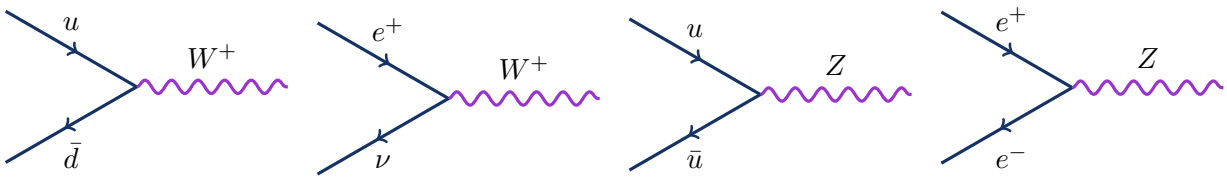

FIGURE 1. Sample interactions vertices between quarks and leptons and W or Z bosons.

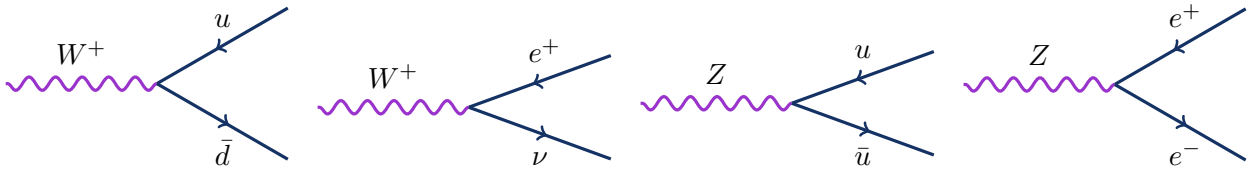

FIGURE 2. Sample decays of W or Z bosons to quarks/leptons.

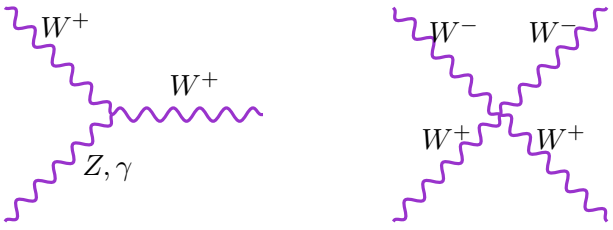

FIGURE 3. Sample self-interaction vertices for W and Z bosons.

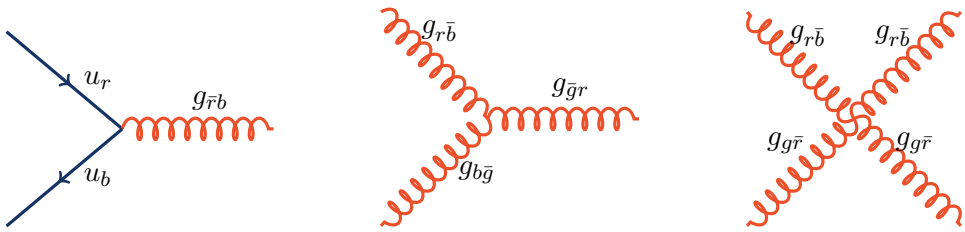

FIGURE 4. Sample interactions vertices between quarks and gluons, or gluon self-interaction, with the red (r), green (g), blue (b) color flow indicated.

FIGURE 5. Feynman diagrams for sample QCD (left) and EWK/QED (right) processes possible from pp collisions.

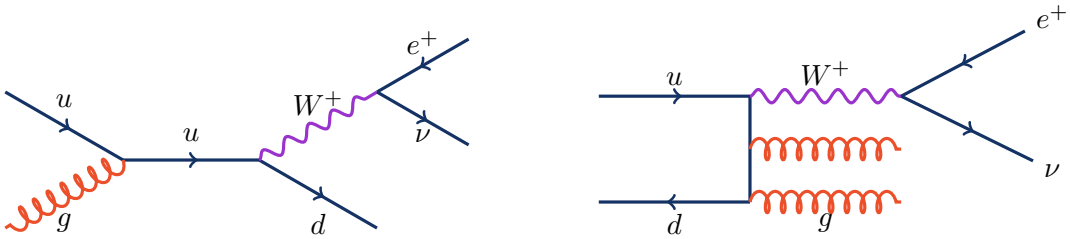

FIGURE 6. Sample Feynman diagrams for W+jets production. On the left, starting from an up quark and gluon and resulting in electron, neutrino, and down quark (becomes a jet). On the right, starting from an up quark and down anti-quark and resulting in electron, neutrino, and two gluon jets.

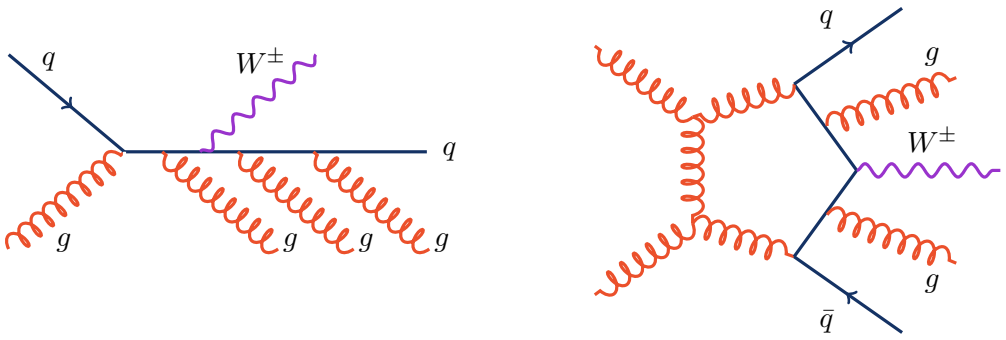

FIGURE 7. Sample Feynman diagrams for W+4jets production.

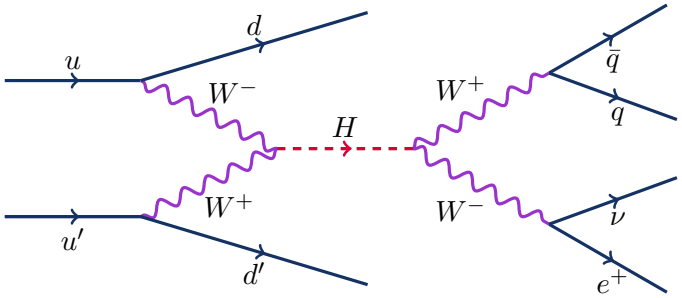

FIGURE 8. Feynman diagram for vector boson fusion Higgs production resulting in an electron, neutrino, and two quark jets.

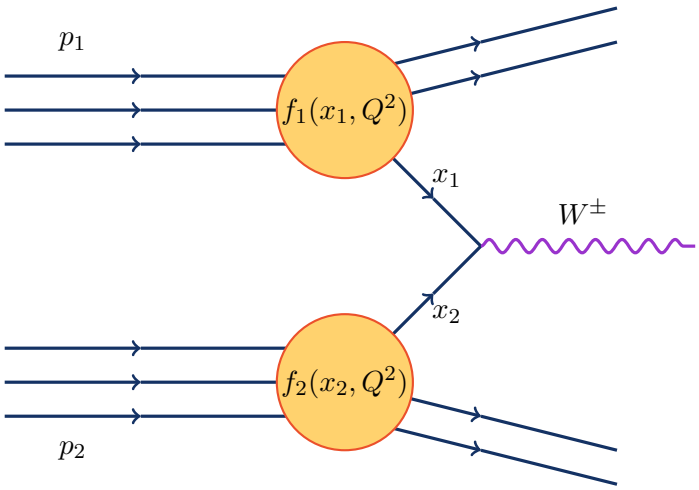

FIGURE 9. Formation of a W boson through deep inelastic scattering of two protons, p_1 and p_2, shown as an interaction between two of the constituent particles with momentum fractions x_1 and x_2.

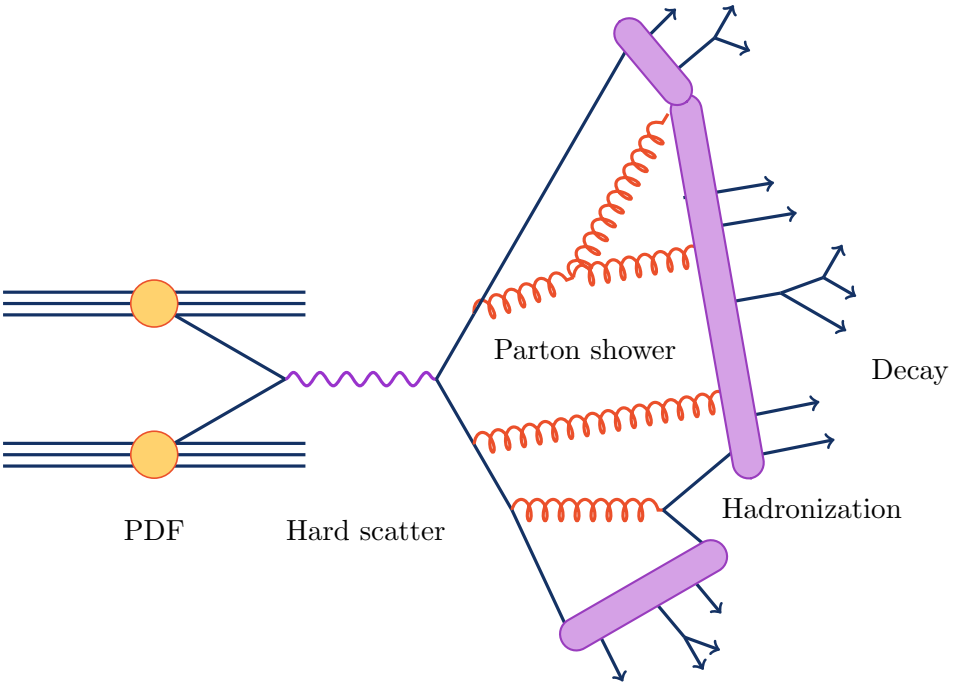

FIGURE 10. A pictorial representation of a collision with the hard interaction and the resulting fragmentation, hadronization, and decay.

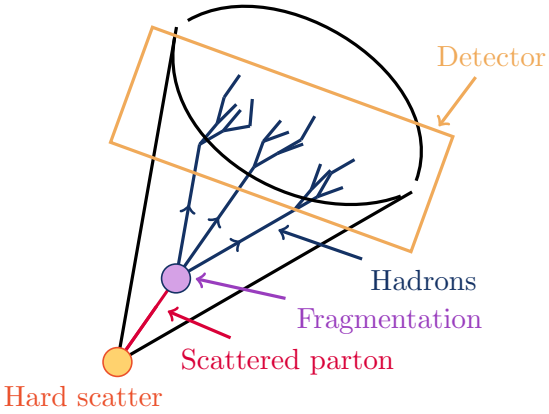

FIGURE 11. Illustration of the evolution from the hard scattering parton to the jet in the detector.

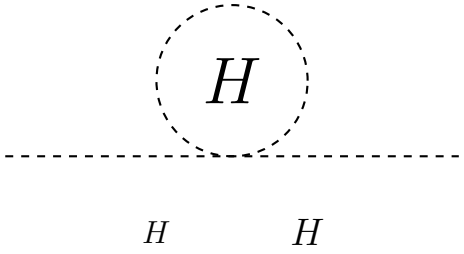

FIGURE 12. Loop with dashed line and various size labels.