

8.701

Introduction to Nuclear
and Particle Physics

Markus Klute - MIT

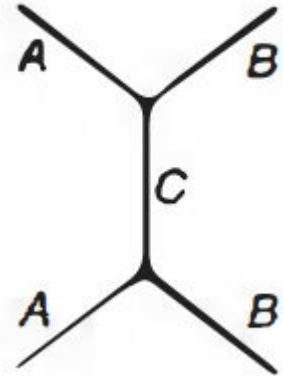
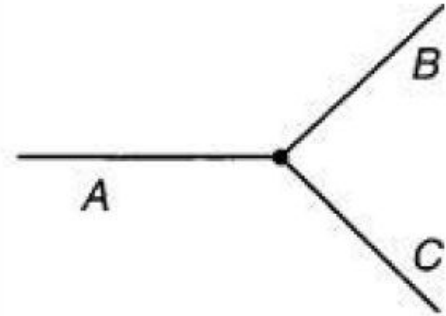
3. Feynman Calculus

3.4 Higher-order Diagrams



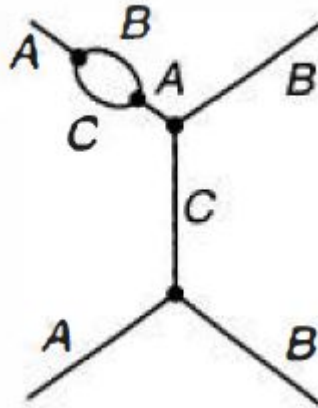
Beyond lowest-order

- Consider $A+A \rightarrow B+B$ in our toy theory with three particle and a primitive vertex:
- The lowest-order (leading-order or tree-level) diagram:



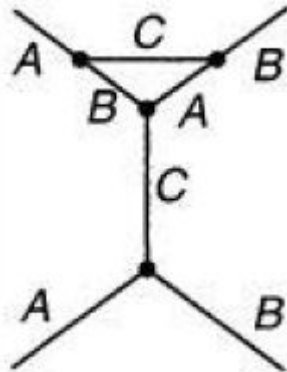
Higher-order diagrams

- Self-energy diagrams (5)



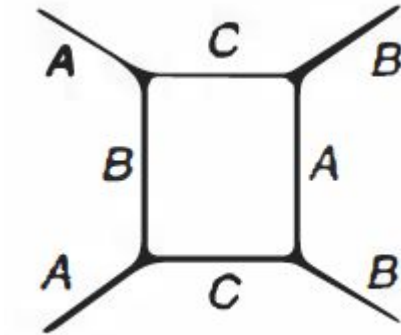
Higher-order diagrams

- Vertex correction diagrams (2)



Higher-order diagrams

- Box diagrams (1)



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Fall 2020

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