

Weak factorization for $D_s \rightarrow KKK$ decay mode

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Motivation

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Isobar model

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T

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Isobar model

$$\boldsymbol{T} = \boldsymbol{C}_{nr} \boldsymbol{\tau}_{nr}$$

Motivation

Isobar model

$$\mathbf{T} = \mathbf{C}_{nr} \boldsymbol{\tau}_{nr} + \sum_k \mathbf{C}_k \boldsymbol{\tau}_k$$

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Isobar model

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There is the necessity to insert the resonances by hand

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We do not exactly know the meaning of those parameters

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$$SU(3)_V$$

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$$D \rightarrow Dh^+$$

$$h \in SU(3)_V$$

State of art

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$$D^+ \rightarrow \pi^+ \pi^+ K^-$$

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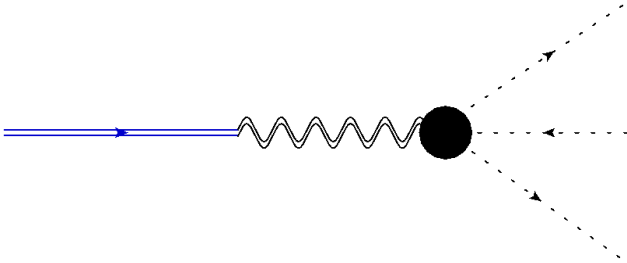
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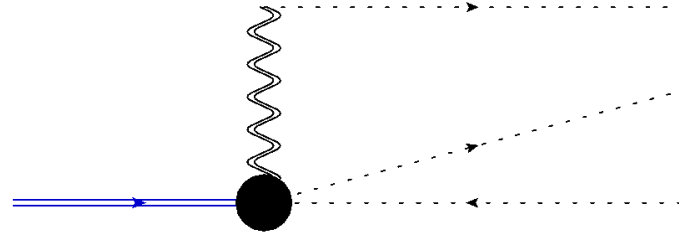
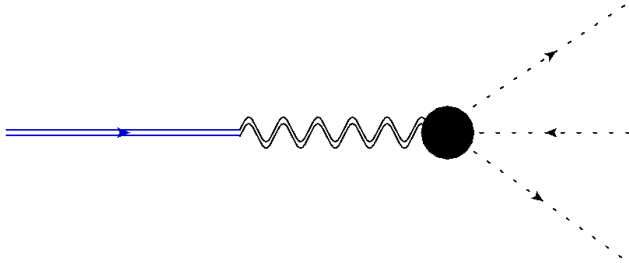
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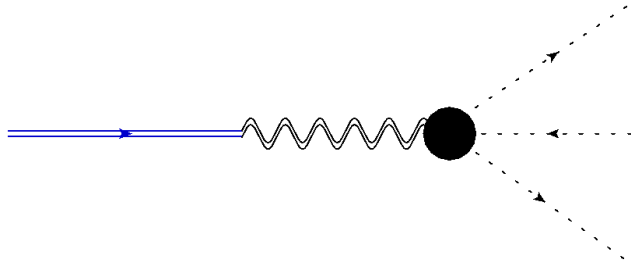
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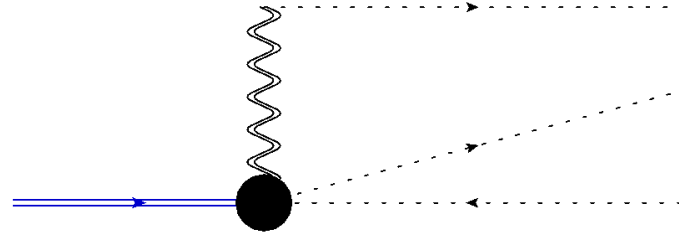
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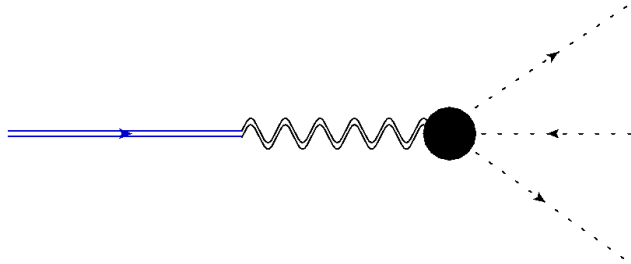
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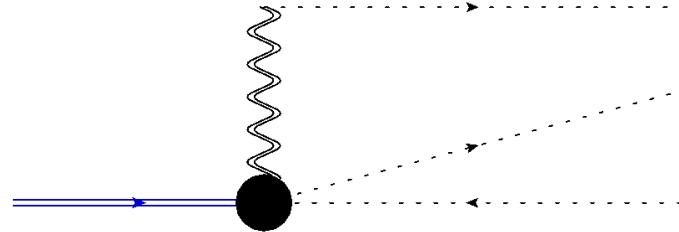
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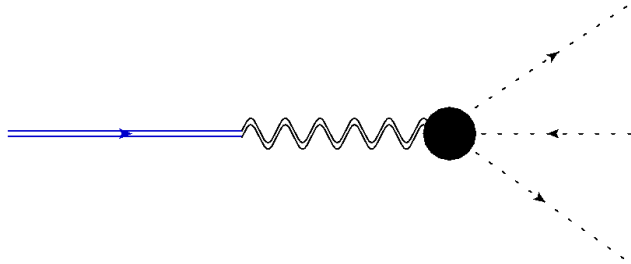


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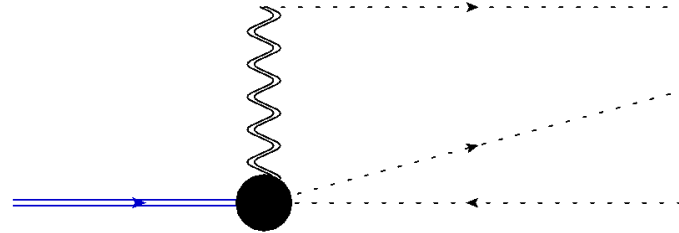
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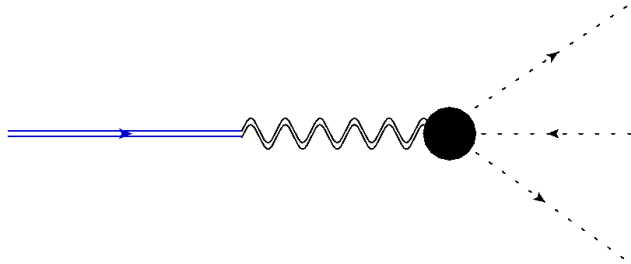


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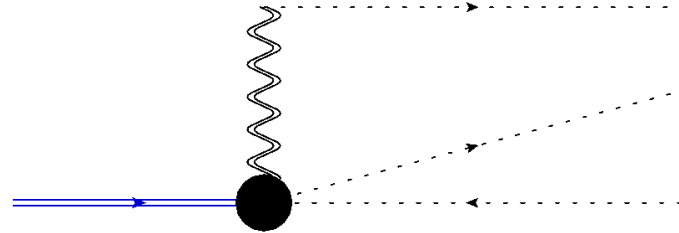
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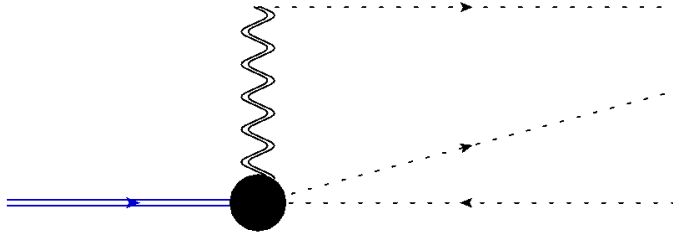


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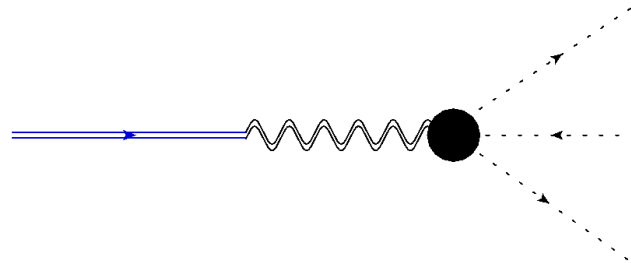
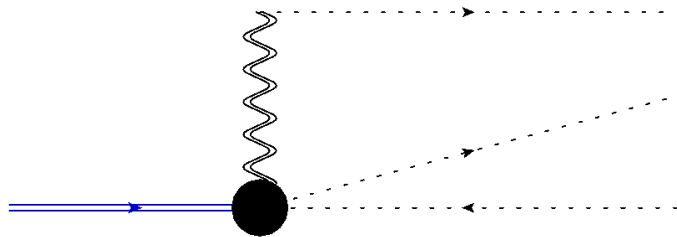
NLO

$$D_s^+ \rightarrow K^+ K^+ K^-$$

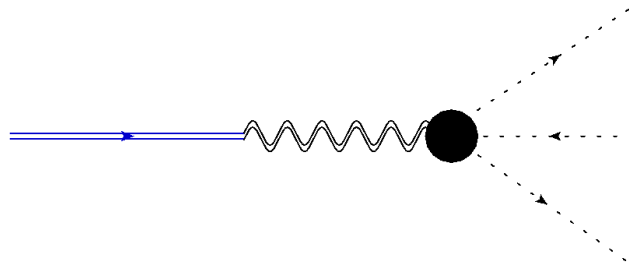
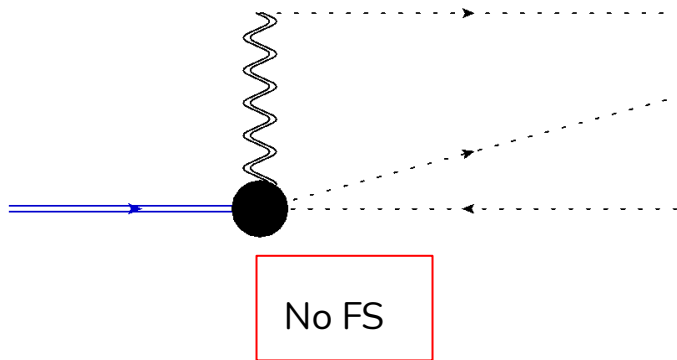
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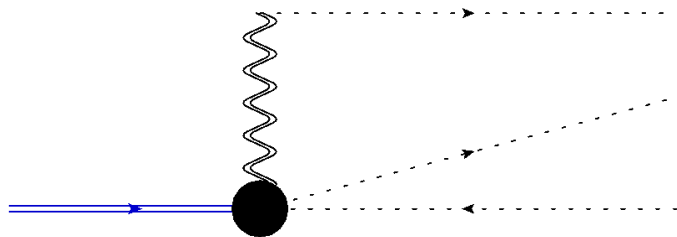
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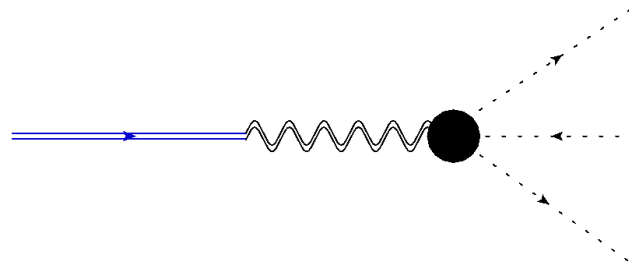
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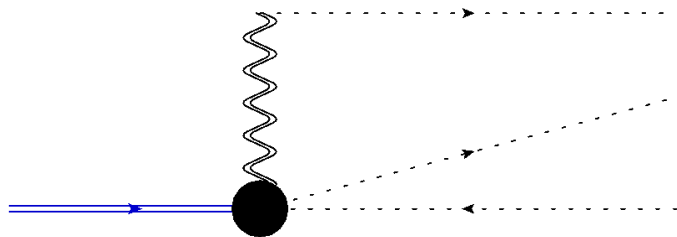


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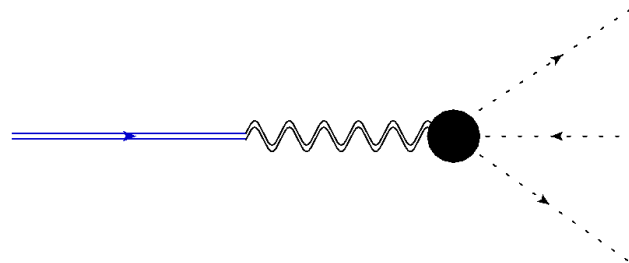
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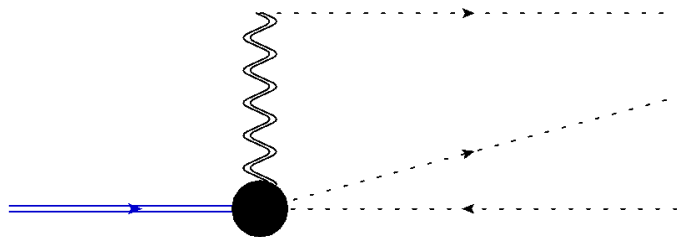
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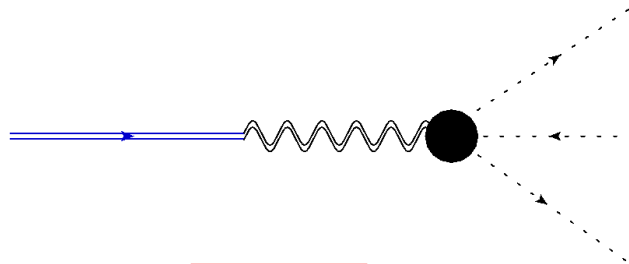
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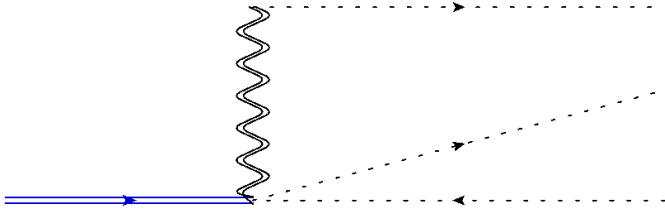


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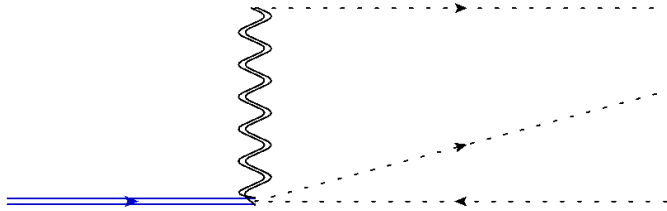
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Topologies

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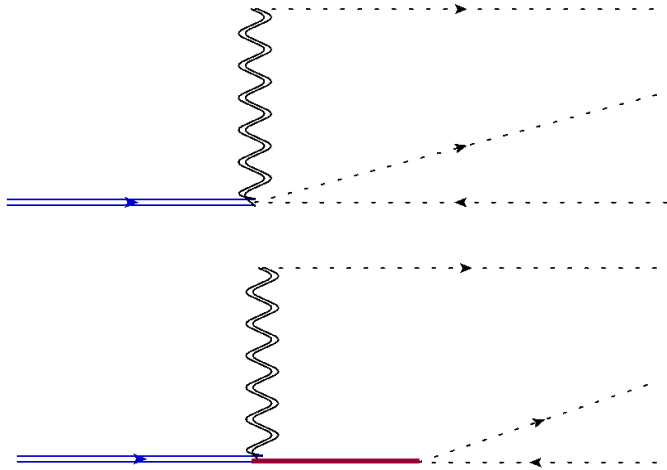


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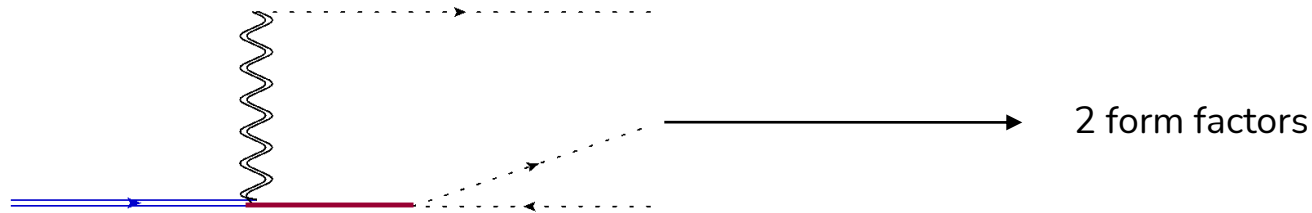
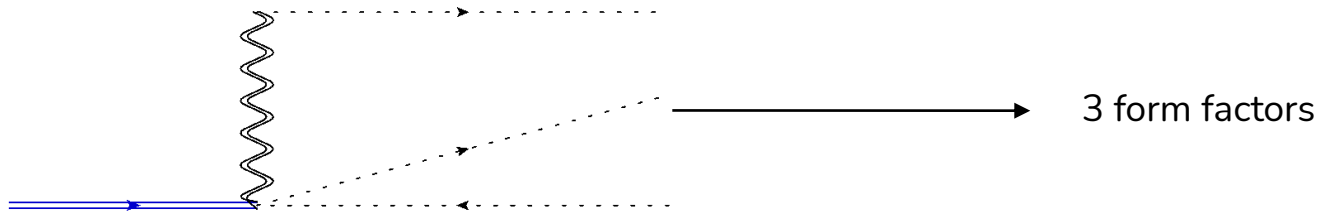
→ 3 form factors

Topologies

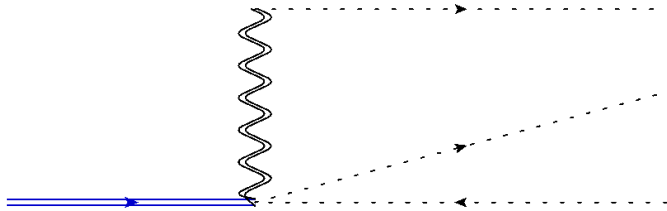


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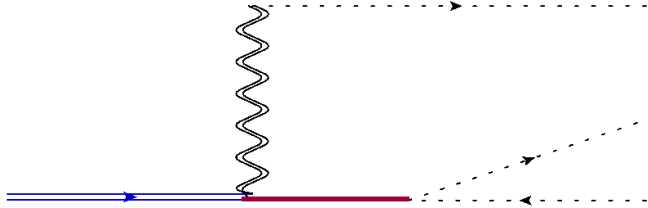
Topologies



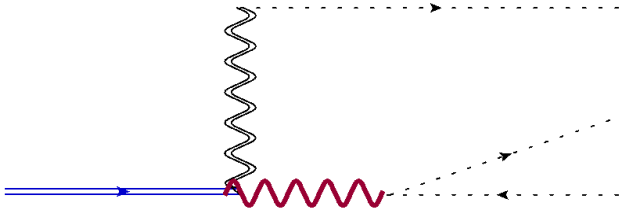
Topologies



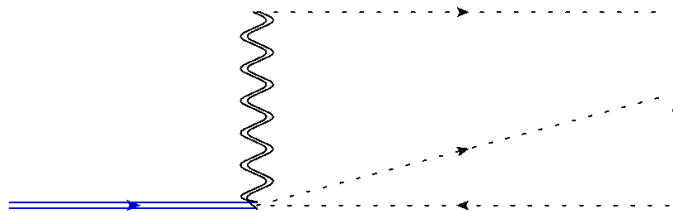
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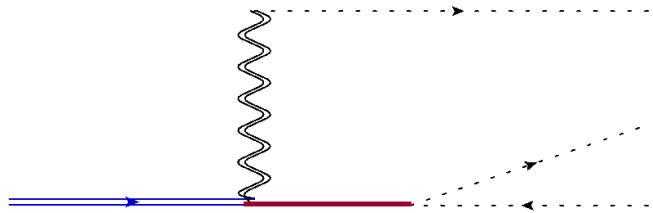
2 form factors



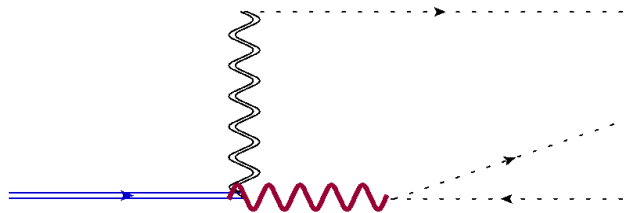
Topologies



3 form factors



2 form factors



4 form factors

References

- R. T. Aoude, P. C. Magalhães, A. C. Dos Reis, and M. R. Robilotta, “Multimeson model for the $D^+ \rightarrow K^+ K^- K^+$ decay amplitude,” *Phys. Rev. D*, vol. 98, no. 5, p. 056021, 2018.
- P. C. Magalhães and M. R. Robilotta, “ $D^+ \rightarrow K^- \pi^+ \pi^+$ the weak vector current,” *Phys. Rev. D*, vol. 92, no. 9, p. 094005, 2015.
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