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Title:	Direct measurement of the Higgs self-coupling in $e^+e^- \rightarrow ZH$
Authors:	Shivaji, A. (/jspui/browse?type=author&value=Shivaji%2C+A.)
Keywords:	Trilinear Higgs Asymmetries λ_3 in e^+e^- collisions
Issue Date:	2019
Publisher:	Elsevier
Citation:	Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 797.
Abstract:	A new method to measure the trilinear Higgs self-coupling λ_3 in a single Higgs production process is proposed. Time-reversal-odd (T-odd) asymmetries in the process $e^+e^- \rightarrow ZH$, $Z \rightarrow f\bar{f}$ are computed from the absorptive part of the electroweak one-loop amplitude. Since the T-odd asymmetries measure the tree-level t-channel $ZH \rightarrow ZH$ scattering, they can be direct probes of λ_3 . The proposed method is quite challenging; a relatively large statistics and polarized e^+e^- beams are demanded. However, this is probably the only approach to directly measure λ_3 in e^+e^- collisions, when a beam energy above the ZHH production threshold is not available.
Description:	Only IISER Mohali authors are available in the record.
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