

Review Form 1.6

Journal Name:	Asian Journal of Research and Reviews in Physics
Manuscript Number:	Ms_AJR2P_85588
Title of the Manuscript:	A Phenomenological Approach to Multi-Higgs Production at High Energy
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<https://www.journalajr2p.com/index.php/AJR2P/editorial-policy>)

PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	<p>i) Fig. 4 (Right) and Fig. 5 (Right); Five different coloured curves are shows to represent Higgs jet scaling pattern for cubic and quartic. However, what variable these different curves represent is not discussed/clarified in the graph. Please address in brief the significance of these five different curves.</p> <p>ii) Page 14, Eq. (3.11); The energy scale at which the quartic splitting begins to dominate over cubic Higgs splitting is calculated as 8×10^{134} GeV!, however, the X-axis scale range plotted in Fig. 6 is 1×10^4 to 1×10^{10}. Please discuss whether this calculated value lies within the plot or it is out of the plot. If the calculated value falls within the plot, please mark that point on the plot.</p>	<p>i) Color code and discussion of the significance of the plots were added in the captions</p> <p>ii) The value is not shown on the plot. This was clarified in the caption of plot 6, where the following was added:</p> <p>The plot shows that for moderate energies the cubic splitting dominates over the quartic one, while the quartic only begins to dominate at energies $\sim 8 \times 10^{134}$ GeV (not shown on the plot), see (Eq. 3.11)</p>
Minor REVISION comments	<p>i) Page 16, last paragraph, line 3, "Recently, [26] calculated"; please correct as, "Recently, Chen <i>et al.</i> [26] calculated".</p> <p>ii) Page 20, reference 28, 29 and 33, please add journal/book details, such as volume no. and year of the journal.</p>	<p>i) Done</p> <p>ii) Done</p>
Optional/General comments	<p>In this study, the problem of the factorial growth in the amplitudes of multi-Higgs production at high energy is taken up by developing a phenomenological approach based on the Higgs splitting functions and Sudakov factors. The obtained results are discussed.</p>	

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PART 2:

	Reviewer’s comment	Author’s comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	