



SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	Journal of Advances in Mathematics and Computer Science
Manuscript Number:	Ms JAMCS 38568
Title of the Manuscript:	Root Systems, Cartan Matrix and Dynkin Diagrams in Classification of Lie Algebras
Type of Article:	Review Paper

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments
In this new version of the paper, the authors have made an effort to avoid the plagiarism within the previous versions. Particularly, they have included new paragraphs, rephrased some other parts of the paper and included the references from which the exposed results derive. In my opinion, once this fact on plagiarism is more or less avoided, the authors have to attend to get a self-contained review paper, with the proofs of all the exposed results being conveniently referenced and with the notions of all the concepts conveniently defined. I give some indications in this regard below. Besides, all the results that are exposed in the paper should be referenced in order to know where they were proved. The style of the paper and the English language should also be improved. Some revisions: - In the abstract: - o Replace "This paper deals" by "This review paper deals". - o Replace "We dealt" by "We deal". - o Replace twice "are introduced" by "are exposed". - Rephrase the sentences of the Introduction section in some way in order to avoid to coincide word by word with the paper [14] of Patricia Brent. - Example 2.2 refers to the particular case in which the Lie bracket is the commutator, whose definition should be included in the paper. That is: "A particular case of a Lie bracket is given by the commutator $[X, Y] = XY - YX$ in those cases in which the vector space under consideration constitutes an associative algebraic structure. In case of dealing with an abelian group (which is associative), this	We have revised our paper and we think more or less that we have done the required standard, and we can not give all small details and trivial definitions in a very short zone like a paper. We gave the most fundamental references in this respect, for example [6] & [7] for the readers to carry their job. Further more, we respect your point of view in some issues and here we give some modifications: - In the abstract : corrections were done. - Sentences in Introduction wererephrased, some material is delated and new is added. - Example 2.2:The commutator is added to definition 2.1 and is refered to in yellow in Example 2.2. - Example 2.3 is discarded. - Example 2.4 now numbered 2.3: some modification is done, and the issue of manifold is deleted, though as it is kown in differential geometry every Lie group is a differentiable manifold. - Theorem 2.6 : It is a new remark you have not mentioned it before in versions 1 & 2, nevertheless, the paper considering Lie algebras, so Lie group is an issue of less interest in our discussion and should be known by the reader who is considering its Lie algebra, so we have avoided redundancy. We added explanation of a Lie group before definition of a Lie algebra in section 2. - Theorem 2.6 (1) is corrected. - Section 3.1 : The notions of adjoint representation, representation of a Lie algebra and Cartan subalgebra are just mentioned in the introduction of this section and we didn't t deal with them as main issues, so we gave references for the reader at the end of this introductions for more study. - Section 3.6: some references are mentioned at the end of the section. Also this is clear



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commutator is trivial, that is, it gives rise to the zero product.” - Example 2.3 y redundant and should be discarded. - Example 2.4 is not evident at all. A good way to improve the paper is to prove explicitly this fact. This is, for example, Exercise 3.20 in the book Manifolds, Tensors and Forms of Paul Renteln (Cambridge University Press, 2013). - The notion of homeomorphism of Lie algebra is not related to Example 2.4. So, it should be included in another paragraph. - Theorem 2.6 deals with the Lie algebra of a Lie group, but the notion of Lie group has not previously defined. It should be done. Besides, it is necessary in order to understand also Section 2.7. - Theorem 2.6: In (1), H is a subgroup of G. - Section 3.1: The notions of adjoint representation, representation of a Lie algebra and Cartan subalgebra have not been previously introduced and should be done. - Section 3.6: Reference a proof where the reader can see why the number of simple roots is equal to the dimension of the Euclidean space E. - Example 3.9.ii: Define restricted root. - 3.10: Define conjugate. Further, this definition deals with Weyl groups, but the notion of Weyl group is given later in 4.1. The exposition of the results should be coherent in this regard.	form linear algebra for natural bases of $\mathfrak{g}^n$, and these are the constituents of classical root systems B_n, C_n & D_n which all span $\mathfrak{g}^n$. - Section 3.9: restricted root systems are mentioned here only as reminder for those readers who want to study the theory of symmetric spaces and their classification. See our comment in yellow at the end of section 3.9. - Section 3.10 became 4.5 related to Weyl group. As for definition of conjugate it is well known to researchers in this field since we may speak about the root system of a complex Lie algebra, and the relation between real and complex fields is clear.
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