



SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	British Journal of Mathematics & Computer Science
Manuscript Number:	Ms_BJMCS_24446
Title of the Manuscript:	The behavior of two coupled mechanical oscillators in non-linear fields and the possibility of obtaining controlled halts
Type of the Article	Original research papers

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments
- Eqn. (11) is appear as factious and there is no validation for incorporating eqn. (10) in eqn. (9). Justification is absence. - In eqn. (13) only new variable incorporated otherwise same eqn (12). Justification is absent for consideration of new variables. - In eqn (14) is equivalent determinant of (A and B) considered but priory no matrix derived by author. - In Eqn (16) how B is obtained, derivation and justification is absent and eqn. (17) derivation is wrong. - Line no. 153 and 154 stating that the parameters to be found but what are those parameters and which system is consisting those parameters and justification is not available. - Eqn. (21) and eqn. (22) derivation is absent and required to be driven. - In eqn. (33) the elements values are incorrect and derivation absent for obtained. - Eqns. (35) and (13) are same and repeated. - Derivation of eqn. (40) and eqn (40) absent . - Author created the Complexities in the manuscript and research work is lacking. - Author is suggested to design the manuscript with cohesive manner to make clarity for his approaches. - The manuscript is not revealing new research work. - Lack of cohesiveness for research approaches, work and new research work is absent.	Dear Sir I will punctually respond to all these issues. - In Equation 10, we proposed a model of a nonlinear function and is defined as overlapping magnetic forces (the relation is validated in advance and in Article 1) , which is artificially introduced in here, just to increase the rank of the matrix link of the system, because we intend to make a vector 3x3 transformation. We will however try introduce additional justifications . - In Equation 12 we have 3 parameters (K1, K2 , K3) and because we want to make a 2-n parametric transformation , we made a parametric renote, perfectly correct from mathematical standpoint. - Equation (14) is a general condition which is applicable to similar matrices that have been explained below, they are not the result of a derivation, but represent the old and new parameters of the system. The matrix system A is composed of the connection parameters of the system in E vector base , canonical , and matrix B is a proposed form, quasi - diagonal , which we want to get after the vector transformation from vector base into V vector base. Incidentally if you will carefully read, the entire article is a vector transformation, in advance taking into account the constants variation possibilities. - The matrix B from equation 16 , was obtained after several successive attempts , not applying a certain known algorithm, just based on the matrix multiplications , conveniently chosen . It was obtained by thinking in advance the steps for solving mathematical model. - We will try to introduce additional explanations or to rewrite the lines 153 and 154 . - Reffering to the (21) equation, the multiplication imposed by vectorial rule, is too voluminous but it is an elementary simple calculus. We chosed not to mention there, because we should complicate the calculus, but its verification is immediate . - Each component of that calculation is made by hand and checked in various elementary math calculation programs, so they are correct. The detailing 9 elementary calculations, I found it too simple to describe. - This is not a correct objection. The system of equations (13) is written in E vector base, while the system of equations (35) is written in V-vector base. These two forms are not similar.



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	9. In Equation 40 was applied an extremely known method, for solving linear differential equation, proposed by Leonard Euler. The verification is immediately. The questions 10, 11 , 12, 13 claim about the same things, and we will answer all along : We apologize for creating a complex calculation, but this was not intentionally created. The whole article is the result of a sustained effort in order to solve the system of 2 nonlinear coupled differential equations, that was proposed in this work and we obtained the analytical laws of motion. The analytical motion laws of two oscillators as a function of time was necessary to implement the double nonlinear oscillator in a more complex prototype, in which we appealed at optimizations and these could not have been done without an analytical motion law. Note: If this work does not contain scientific news, as you sustain, please indicate us a scientific article, available on the web, or a scientific book where this physical system made of two oscillators, coupled in a nonlinear field, is treated and resolved in an analytic way. We should implement it, and we should conclude that the result of our work is not useful. We mention that it is an original approach, combining several mathematical methods, being the novelty. The scientific literature to which I had access did not allow an analytical solving at this problem. In our opinion this problem is not solved anywhere in an analytic way. The article is not a approximate approach, it is an exact, analytical one. There is only approximate in this article, namely there where we solved the nonlinear differential equation in its decoupled form. But this is taken from the previous article the authors mentioned in the bibliography [2] where it received a favorable opinion from other reviewers and from the editor. The theoretical result has been experimentally validated, as in the figures that are presented in the article. We did not described in detail the experiment, because our intention was for a theoretical article. Actually, the whole mechanic situation can be simulated in a mechanical simulator, or in Java applications, that are present on the Internet.
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