



**SDI Review Form 1.6**

Journal Name:	<a href="#">Physical Science International Journal</a>
Manuscript Number:	Ms_PSIJ_38497
Title of the Manuscript:	Circuit Design of the Polynomial Chaotic Sun System
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:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)

**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)
<b>Compulsory</b> REVISION comments	<p>The manuscript may be considered for publication. Authors have presented Circuit Design of the Polynomial Chaotic Sun System. The following issues should be addressed :</p> <ol style="list-style-type: none"> <li>Fig 4. Circuit output signals from PSpice A/D show sensitivity to initial stored voltages of the capacitors. V(X),V(Y),V(Z) were initially set at (0,0,0)volts ? Please provide PSPICE schematics circuit and simulation results to verify circuit output signals of Fig4. Which initial values were set at (0,0,0)volts are correct.</li> <li>The amplitudes and scales of the state variables differ markedly and are also too large for a reasonable DC supply; to take care of these issues, we make the following transformations? Please explain the reason why the authors choose transformations of equation (2) and equation (5). Do authors have any theoretical reference?</li> <li>Many papers discuss to construct chaotic circuits, such as [A new 3D chaotic system with golden proportion equilibria: Analysis and electronic circuit realization : İ Pehlivan, Y Uyaroğlu - Computers &amp; Electrical Engineering, 2012 – Elsevier]</li> </ol> <p>Please discuss the advantages of the introduced method in the conclusion section.</p> <ol style="list-style-type: none"> <li>The real circuit of the chaotic system is constructed on a breadboard and the experimental results are shown in scope will be better.</li> </ol>	<ol style="list-style-type: none"> <li>We have designed <i>PSpice</i> top-level part as shown in Fig. 3; each contains the circuit design of Fig. 2 except that terminals for the capacitors are mapped out to the top-level; initial stored voltages of the capacitors of a part were set at (0.01,0.00,0.01) volts and in the other part were set at (0.02,0.01,0.02) volts. The simulation results are given in Fig. 4 (Middle-Right, Bottom-Left, Bottom-Right) and they show sensitive dependence on initial stored voltages.</li> <li>The transformation was necessary because <i>PSpice-A/D</i> simulation would not give a response that agreed with <i>Matlab</i> for a voltage supply within safe range for electronic components like the integrated circuits. Also, running the <i>Matlab</i> max and min functions on the numerical data stored in <math>x_1</math>, <math>x_2</math> and <math>x_3</math> reveals the wide difference between these variables.</li> <li>I have highlighted this paper and a couple of others in the report. However, the polynomial chaotic Sun system has far more parameters and more nonlinearities than all of them, which means it could be applied to more complex physical systems with quadratic interactions.</li> <li>Thank you, we finally implemented the system.</li> </ol>
<b>Minor</b> REVISION comments		
<b>Optional/General</b> comments		