

**List of Changes**

Manuscript: ANALYSIS OF VOLTAGE SPACE VECTORS UTILIZATION OF VARIOUS PWM SCHEMES IN THE DUAL-INVERTER FED FIVE-PHASE OPEN-END WINDING MOTOR DRIVES

**First revision**

*Response and Revision made by Author(s)*

**Reviewer #1:**

No	Comments	Revision/Changes
1	No significantly contribution in this paper. Authors need to explain what different of this work with the previous work. Is this paper only change the parameters of the voltage space vectors utilisation of various PWM schemes in the dual-inverter fed five-phase motor drives from the perspective of a single three-level voltage space vectors	All of the previous works develop the PWM scheme from individual voltage space vectors of two-level inverters hence the used vectors among the 211 vectors that available in this structure have never been discussed. The paper maps the utilized vectors from the three-level voltage space vector point of view.  To increase the value of this paper, a new switching strategy is proposed by utilizing the redundant switching vectors. The new switching strategy offers a more effective power sharing capability between two inverters compared than the original switching technique of the decomposition PWM scheme.
2	What is the new scheme in the work?	The work improve the performance of the Decomposition PWM scheme by applying a new switching strategy
3	Related to equation, could not find some thing new in the equation parameters. What do you mean of the index parameter a-b and x-y planes and any correlation to Fig 1.	Indeed, equation (1) has no correlation with Fig. 1 but it relates to Fig. 2
4	It is better for author not to review previous work in sub chapter 2.2	Section 2.2 has been removed from manuscript
5	More explanation of the analysis : “why and how”	Some additional figures and explanations have been added to the result.
6	Need to explain “why” and explain with related to the model and theory	Some additional explanations have been added to the discussion.
7	Author have to elaborate some more references related to the work	Some more papers have been elaborated

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Manuscript: ANALYSIS OF VOLTAGE SPACE VECTORS UTILIZATION OF VARIOUS PWM SCHEMES IN THE DUAL-INVERTER FED FIVE-PHASE OPEN-END WINDING MOTOR DRIVES

**Second revision**

Response and Revision made by Author(s)

**Reviewer #1:**

No	Comments	Revision/Changes
1	<p><i>Introduction:</i> In the last paragraph, authors must mention the results and clearly state algorithm or model of new strategy of switching</p>	<p>The following sentences have been added in introduction:  The new switching strategy utilizes the redundant switching states in the applied vectors hence both inverters operate alternately between PWM mode and clamping mode. The results show that the new switching technique is able to maintain the DC-link voltage of both inverters in the desired values for all of speed ranges.</p>
2	<p><i>Methodology:</i> Explain what do you mean with new switching strategy and how the algorithm/strategy is developed.</p>	<p>The following paragraph has been added in methodology:  Based on the information of the utilized vectors, a new switching strategy is proposed. A new switching technique is developed by applying the particular redundant switching states in the applied voltage vectors. By using a different set of switching states, a new switching sequence is achieved that now governs the two inverters to operate interchangeably between PMW mode and clamping mode, instead of operating one inverter in PWM mode and another inverter in square wave mode / clamping mode (as in the case of decomposition PWM scheme).</p>
3	<p>What is a new one of equation 1 and 2 with the previous work in Dujic et al 2009?? Those are not clear.</p>	<p>Equations 1 and 2 (equations 2 and 3 in the revised manuscript) describe the mapping of voltage space vector of two-level inverter in the <math>\alpha - \beta</math> and <math>x - y</math> planes respectively. The generated voltage space vectors are depending on the phase voltage. The phase voltages are function of switching states and common mode voltage. So equation 1 and 2, describe relationship of voltage space vectors and the switching states. These equations are discussed in Dujic et al.  In the dual-inverter fed, the voltage space vectors are generated from the switching state combinations of switching states of inverter 1 and switching state of inverter 2. Two equations that represent the relation of the phase voltage space vectors and the switching states of both inverters have been added. Hence the equations in Dujic are the basis for deriving the voltage space vectors of dual-inverter fed five-phase motor drives.</p>
4	<p><i>(Previous comment)</i> What do you mean of the index parameter in the <math>\alpha -</math></p>	<p>A five phase machine is basically a five-dimensional system, by using a technique that is proposed in Zhao and Lipo (1995), the five dimensional system can be decomposed into two two-dimensional planes and one zero plane in the origin. Index</p>

	<p><math>\beta</math> and <math>x - y</math> planes and any correlation to Fig 1.</p>	<p>parameter <math>\alpha - \beta</math> and <math>x - y</math> planes relates with the mapping of the voltage space vector in two two-dimensional planes. Further, in a five-phase system, harmonics of the order <math>10k \pm 1</math> (<math>k = 0, 1, 2, 3 \dots</math>) map onto the torque/flux producing sub-space, <math>\alpha - \beta</math>, while harmonics of the order <math>10k \pm 3</math> map into the <math>x - y</math> sub-space and <math>10k \pm 5</math> are zero-sequence components.</p> <p>Relation of equations 2 and 3 to Figure 1 now can be identified with the help of equation 1 (in the new manuscript)</p>



## Reviewer's Guide

### PART A: *Editorial Office Only*

#### SECTION I

Reviewer's Name:	
E-Mail:	
Manuscript Number:	IJTech-04-144
Title:	ANALYSIS OF VOLTAGE SPACE VECTORS UTILIZATION OF VARIOUS PWM SCHEMES IN THE DUAL-INVERTER FED FIVE-PHASE OPEN-END WINDING MOTOR DRIVES

### PART B: *Reviewer Only*

#### SECTION II: Comments per Section of Manuscript

General comment:	Need more revisions
Introduction:	In the last paragraph, authors must mention the results and clearly state algorithm or model of new strategy of switching
Methodology:	Explain what do you mean with new switching strategy and how the algorithm/strategy is developed. What is a new one of equation 1 and 2 with the previous work in Dujic et al 2009?? Those are not clear. Authors said, Indeed, equation (1) has no correlation with Fig. 1 but it relates to Fig. 2 but is not clear. Pls make clearly ....
Results:	
Discussion:	
Bibliography/References:	
Others:	Still have to improve the English quality ...

**SECTION III - Please rate the following: (1 = Poor) (2 = Fair) (3 = Average) (4 = Above Average) (5 = Excellent)**

Originality:	3
Technical Quality:	3
Methodology :	3
Readability :	4
Practicability:	3
Organization:	4
Importance:	3

**SECTION IV - Recommendation: (Kindly Mark with an X)**

Accept As Is:	
Requires Moderate Revision:	<b>Must to revise</b>
Reject On Grounds of (Please Be Specific):	

**SECTION V: Additional Comments**

Please add additional comments, if any:

**RETURN OF COMMENTS**

Thank you for contributing to International Journal of Technology by completing this review. Please return your comments to:

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November 2, 2015

Re: **Acceptance Letter**

Dear I Nyoman Wahyu Satiawan

Greetings from Depok,

The editorial board is delighted to inform you that your paper entitled "ANALYSIS OF VOLTAGE SPACE VECTORS UTILIZATION OF VARIOUS PWM SCHEMES IN THE DUAL-INVERTER FED FIVE-PHASE OPEN-END WINDING MOTOR DRIVES" has been accepted to be published in the next issue of IJTech. At the present, we are conducting further necessary action to complete the publication process.

On behalf of IJTech, we appreciate your intention and willingness to publish your work with IJTech.

Warmest regards,



Dr. Mohammed Ali Berawi  
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