

Volume 1 Issue 1, December 2012

**International Journal of Innovative
Science and Modern Engineering**

ISSN : 2319 - 6386 (Online)

Website: www.ijisme.org



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Exploring Innovation: A Key for Dedicated Services

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	Authors:	Lemba D. Nyirenda	
	Paper Title:	P versus NP Millennium Prize Problem 2000-2013 Olympics: NP=P for NP-Class by Dedekind-Cut TSP P-Solvability	
1.	<p>Abstract: The paper presents the P-Solvability characteristics of the TSP, an NP-Complete problem, in a 3D Dedekind-Cut-weight Periodic Table domain as defined in the Zambian PACRA Patent No. 2/2008. Hence by Cooks theorem, the status of all problems in the NP-Complete Class is NP=P, by virtue of the TSP being a member of the NP-Complete Class having the NP=P solvability status. This African Computer Science finding is opposite to Dr Vinay Deolalikar's 2010 finding of $P \neq NP$. This settles the 'P versus NP' open millennium prize problem in computer science. The research work was concluded on the 10th Day of August, 2012 before the deadline of 1st January 2013 at 5pm CET USA. The TSP NP=P status is due to the discovery of $ND[dn] = \{d1 \text{ to } dn\}$, the third missing weighted network dimension. This has for the first time made the crossing of the combinatorial intractability barrier practically possible. $ND[dn]$, the Dedekind-Cut weight index set is analogous to: the points of a real number line in one-to-one correspondence with the source-node period weights in accordance with the Cantor-Dedekind axiom.</p> <p>Keywords: Dedekind-cut periodic table, Cantor-Dedekind axiom, millennium prize problem, p versus np problem, TSP.</p> <p>References:</p> <ol style="list-style-type: none"> Barrow, John D., (1998). Impossibility: The Limits of Science and the Science of limits, pages 8-19, 100-107, 208, 221-228. Oxford University Press (UK). Baumslag, Benjamin and Bruce Chandler (1968). Group Theory, pages 107-115, 158-166. McGraw Hill Schaum's Outline Series. New York, USA) Boyer, Carl B. (1949). The History of the Calculus and its Conceptual Development, pages 33, 291-293. Dover. New York, USA. Cohen, Daniel I. A. (1978) Basic Techniques of Combinatorial Theory. 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2.	Authors:	Archana M. Kadam, Satyen Dhamdhare, D. S. Bankar	9-13
	Paper Title:	Application of DSTATCOM for Improvement of Power Quality using MATLAB Simulation	
	<p>Abstract: An increasing demand for high quality, reliable electrical power and increasing number of distorting loads may leads to an increased awareness of power quality both by customers and utilities. The most common power quality problems today are voltage sags, harmonic distortion and low power factor. This paper presents the reduction of voltage sags, using Distribution Static Compensator (D-STATCOM) with LCL Passive Filter in Distribution system. The model is based on the Voltage Source Converter (VSC) principle. D-STATCOM can use with different types of controllers. The D-STATCOM injects a current into the system to mitigate the voltage sags.LCL Passive Filter Was then added to D-STATCOM to improve harmonic distortion and low power factor. The simulations were performed using MATLAB SIMULINK.</p> <p>Keywords: D-STATCOM, VOLTAGE SAG, VOLTAGE SOURCE CONVERTER (VSC), LCL PASSIVE FILTER, THD.</p> <p>References:</p> <ol style="list-style-type: none"> 1. Bollen, M.H.J., "Voltage sags in Three Phase Systems", Power Engineering Review , IEEE, Volume 21, Issue :9, September 2001, PP: 11-15. 2. INoramin Ismail, 2 Wan Norainin Wan Abdullah "Enhancement of Power Quality in Distribution System Using D-STATCOM" 978-1-4244-7128-7/10/\$26.00 ©2010 IEEE, The 4th International Power Engineering and Optimization Conference (PEOCO2010), Shah Alam, Selangor, MALAYSIA. 23-24 June 2010. 3. "Operation of a DSTATCOM in Voltage Control Mode" by Mahesh K. Mishra, Student Member, IEEE, Arindam Ghosh, Senior Member, IEEE, and Avinash Joshi. 4. Kolli Nageswar Rao1, C. Hari Krishna2, Kiran Kumar Kuthadi3 "Implementation of D-STATCOM for Improvement of Power Quality in Radial Distribution System" International Journal of Modern Engineering Research (IJMER) Vol. 2, Issue. 5, Sep.-Oct. 2012 pp-3548-3552. 5. R.Meinski, R.Pawelek and I.Wasiak, "Shunt Compensation For Power Quality Improvement Using a STATCOM controller Modelling and Simulation", IEEE Proce, Volume 151, No. 2, March 2004. 		

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