References:

1. Barabanshchikov, V.A. (2002). Perception and event. SPb: Aliteiya.
2. El'konin, B.D. (1994). Introduction to psychology of development (in the tradition of cultural-historical theory of L. S. Vygotskiy). Moscow: Trivola.
3. Fedorinova, Z.V. (2013). The influence of case-study technology on the quality of educational process participants' collaborative activity.
4. Krasnoyarsk: Publishing Houses Science and Innovation Centre.
5. Gryakalov, A.A. (2004). Letter and event: esthetic topography of the present. SPb: Science.
6. Genisaretsky, O.I. (2007). Development of the event in the personal-tribal and active-thought relation. URL: http:www.prometa.metod.ru.
7. Kiyashchenko, L.P., & Tishchenko, P.D. (1999). Event and sense: synergetic Experience of Language. Moscow: IPh RAN.
8. Muza, D.Ye. (2002). Methodological analysis of the event in the history of philosophy. Thesis abstract. Donetsk: DNTU.
9. Prozumentova, G.N. (2005). Transition to the Open educational space. Phenomenology of educational innovations. Part 1. Tomsk: Tomsk State University Publishing.
10. Prozumentova, G.N. (2009). Transition to the Open educational space. Typology of educational innovations. Part 2. Tomsk: Tomsk State University Publishing.
11. Slobodchikov, V.I., & Isayev, Ye.I. (2000). Basics of psychological anthropology. Psychology of human development. The development of subjective reality in ontogenesis. Moscow: University Press.
12. Shabes, V. Ya. Event and text. Moscow: High School.
13. Shchittsova, T.V. (2002). Event in Bakhtin's philosophy. Minsk.
14. Volkova, N.V. (2014). The influence of educational events on the formation of pedagogical activity in student training. Biysk: AGAO.

OPTIMIZATION OF ELECTRICAL CHAIN OF A LINEAR MICRO-COGENERATION SYSTEM

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Key-words: micro-generation, Stirling engine, optimization, linear induction generator, static converter.

References: "optimisation de la chaine électrique d'un système de micro-cogénération linéaire", written by Marie RUELLAN, Thu DANG, Hamid AHMED, Laurent PREVOND, Pierre FRANCOIS, Bernard MULTON. (SATIE ENS Cachan).

Abstract:

This article's goal it's to present a method to optimize a linear electrical conversion chain for a thermos-mecanic-electrical micro-cogeneration system using a Stirling technology. To begin, the principle of micro-cogeneration system is explained then a description of the electrical chain is developed.

Introduction:

A micro-cogeneration is used like a thermal/energy supplier in individual dwelling. It's composed of two Stirling type driving motors (which work in phase opposition, it means that the release time of the first piston corresponds with the compression time of the second piston) associated to linear electrical inductive generator. Because of congestion issues, the choice of the integration of driving motor has been made. So, the system is composed of thermo-mechanic chain coupled to an electro mechanic chain. The electrical energy created is injected to domestic single-phase network (230V-50Hz) via a double convertor (AC/DC/AC). Pistons (one for each motor) are rigidly connected, so we considered that there is only one piston which is driven by alternative motion according to its axis. Its frequency and its amplitude depend on the temperature and electromagnetic force (opposed to motor rotation). This is this force which permits to optimize a good working of the thermo-mechanic chain in terms of stability.

This kind of Stirling motors are not naturally stable. That's why this stability has to be controlled and commanded by inductive Machin which, mainly, works as a generator during a cycle but sometimes, it can work as motor.

Model and methodology for optimization.

The goal, in this part, is to present a global method to optimize the sizing and models used. The tool used is NSGA II algorithm.

SMART BUILDING: TOWARDS OPTIMUM ENERGY MANAGEMENT

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Living comfort is a notion related to intelligent home installations. This perception, for each, allows simplify the lives of the occupants of the home. Intelligent home consists mainly of a complex integration of technologies, electric and thermal materials, telecommunications and computerization. More specifically, the thermal comfort, security and safety of intelligent home with an optimize exploitation of energies consumed are important issues. In order to quantify the first concept, the energy performance of