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Abstracts and the descriptions of works in Art and Science submitted to www.IntellectualArchive.com in December 2012

ID #: 982	**Literature / Internet articles / Analysis of literature**
Submitted on:	Dec 01, 2012
Author:	**Yuri N. Klimov**
Title:	**Dependence of lengths of words on frequency and quantity of words in A.P. Chehov`s stories "Dama s sobachkoy"(" Lady with dog")**

Abstract: In A.P. Chehov`s stories "Dama s sobachkoy" (" Lady with dog") [1] makes total of words 2134, and their frequency - 5152 by a technique [2]. Quantities of words, logarithms of lengths of words from the logarithm of frequency, the logarithm of length of words from the logarithm cumulative frequencies, the logarithm of length of words from the logarithm of quantity of words and the logarithm of length of words from the logarithm of cumulative quantity of words are investigated dependence of length of words, since the greatest size, from frequency. For reception of adequate mathematical dependences experimental data resulted to cumulate and represented as logarithms. It is shown, that the length of a word is directly proportional to the logarithm of length of a word and inversely proportional to its frequency, cumulative frequency, quantity of words, cumulative quantity of words and logarithms: frequencies of words, cumulative quantity of words and cumulative frequency of words. The specified dependences investigated on the linear, sedate, logarithmic equations and polynoms of the second and third degrees. Relative speed in sedate dependence for the given dependences can be positive or negative and serves for an estimation of the concrete text. Logarithms of frequency are increased with reduction of length of words from 0 up to 6,5568, the logarithm of quantity of words - from 0 up to 2,8332, the logarithm of cumulative frequency - from 0 up to 8,5471 and the logarithm of cumulative quantity of words - from 0 up to 7,6658. Thus the logarithm of length of words falls from 2,7726 up to 0. 50 % of quantity of words (1057) falls to length of a word in 7 letters, and 50 % of frequency of words (2576) - for length of a word in 5 letters. Keywords: quantity of words, frequency of words, length of words, dynamics of quantity of words, dynamics of length of words, average length of words, cumulative quantity of words, cumulative frequency of words, modeling, linear dependence, sedate dependence, logarithmic dependence, polynoms of the second degree, polynoms of the third degree

Web link:	*www.IntellectualArchive.com/getfile.php?file=Jt1XETILNt3&orig_file=Dependence of lengths of words on frequency and quantity C DSS_IA_2012.docx*

ID #: 983	**Natural Sciences / Computer Science / Analysis of algorithms**
Submitted on:	Dec 03, 2012
Author:	**I. Kurzheievskyi, V.V. Brodovska, A.V. Filimonova**
Title:	**Stochastic Algorithm For Authenticating Users**

Abstract: The article talks about stochastic algorithm for authenticating users, authentication using a unique user ID, the date and time to start the authentication process, and a random number. The numbers that make up the user ID, date, time and a random number, are mixed using the generator of pseudorandom sequences (GOPS).The result of reshuffling is encrypted with RSA algorithm.

Web link:	*www.IntellectualArchive.com/getfile.php?file=di8sKlq5cl5&orig_file=STOCHASTIC ALGORITHM FOR AUTHENTICATING USERS.docx*

ID #: 984	**Natural Sciences / Computer Science / Analysis of algorithms**
Submitted on:	Dec 03, 2012
Author:	**I.V. Kurzheevskij, A.V. Filimonova**
Title:	**The Algorithm of Stochastic Encryption with the Use of Abelian Group of Points of Elliptic Curve**

Abstract: In this research we study the algorithm of stochastic encryption with the use of abelian group of points of elliptic curve. The distinctive feature of this algorithm is the following: firstly, generation of new alphabet for every communication session, where every symbol of alphabet corresponds to the coordinates of a point on the EC. Secondly, addition of the initial text with the accidently generated symbols and their stochastic randomization with the help of pseudorandom sequence generator (PSG). Thirdly, stochastic replacement of each symbol, that is encrypted with the use of random

parameter.

ID #: 985   **Social Sciences / Sociology / Sociology of race and ethnic relations**

Submitted on: Dec 03, 2012

Author: **Pavel Filatov**

Title: **Individualism and collectivism as the trends of consciousness and behavior of the individual**

Abstract: The work deals with the problems of psychological features in the national mentality of teenagers-representatives of the Yakut, Russian and English cultures. The study identifies similarities and differences in the situational characteristics of the national mentality of teenagers, appearing in intercultural communication. The author explores the situational characteristics of the national mentality of teenagers, in particular, relationship - self-expression, social roles, etiquette, ethnic values - values, attitudes, habits, world vision - knowledge, perceptions and expectations.

ID #: 986   **Natural Sciences / Mathematics / Algebra**

Submitted on: Dec 03, 2012

Author: **W. B. Vasantha Kandasamy, Florentin Smarandache, Iqbal Unnisa**

Title: **Supermodular Lattices**

Abstract: In this book the authors introduce a new class of lattices called Supermodular Lattices, which is an equational class of lattices lying between the equational class of distributive lattices and modular lattices. Several other new properties related with these lattices are introduced, described and developed.

ID #: 987   **Natural Sciences / Mathematics / Probability**

Submitted on: Dec 03, 2012

Author: **Konstantin Avrachenkov, Alexei Piunovskiy, Zhang Yi**

Title: **Markov Processes with Restart**

Abstract: We consider a general honest homogeneous continuous-time Markov process with restarts. The process is forced to restart from a given distribution at time moments generated by an independent Poisson process. The motivation to study such processes comes from modeling human and animal mobility patterns, restart processes in communication protocols, and from application of restarting random walks in information retrieval. We provide a connection between the transition probability functions of the original Markov process and the modified process with restarts. We give closed-form expressions for the invariant probability measure of the modified process. When the process evolves on the Euclidean space there is also a closed-form expression for the moments of the modified process. We show that the modified process is always positive Harris recurrent and exponentially ergodic with the index equal to (or bigger than) the rate of restarts. Finally, we illustrate the general results by the standard and geometric Brownian motions.

ID #: 988   **Natural Sciences / Mathematics / Algebra**

Submitted on: Dec 03, 2012

Author: **Alexey Piunovskiy, Yi Zhang**

Title: **Discounted Continuous-time Markov Decision Processes with Unbounded Rates: the Dynamic Programming Approach**

Abstract: This paper deals with unconstrained discounted continuous-time Markov decision processes in Borel state and action spaces. Under some conditions imposed on the primitives, allowing unbounded transition rates and unbounded (from both above and below) cost rates, we show the regularity of the controlled process, which ensures the underlying models to be well defined. Then we develop the

dynamic programming approach by showing that the Bellman equation is satisfied (by the optimal value). Finally, under some compactness-continuity conditions, we obtain the existence of a deterministic stationary optimal policy out of the class of randomized history-dependent policies.

Web link: *www.IntellectualArchive.com/getfile.php?file=IfHl8RoxILj&orig_file=Alexei_Piunovskiy__Discounted_Continuous-time.pdf*

ID #: 989   **Literature / Internet articles / Analysis of literature**

Submitted on: Dec 07, 2012

Author: **Yuri N. Klimov**

Title: **Dependence of frequency of words on their quantity and lengths in A.P. Chehov`s stories "Dama s sobachkoj " ("Lady with a dog")**

Abstract: : In A.P.Chehov`s stories "Dama s sobachkoj" ("Lady with dog") [1] makes total of words 2134, and their frequency - 5152 by a technique [2]. Dependences of frequency of words on their quantity, on their length, since the greatest size, the logarithm of frequency of words from the logarithm of lengths of words, since the greatest size, frequency of words from quantity of words are investigated at length of a word from 16 up to 5 letters, quantity of words from length of a word, frequency of words from length of words, cumulative frequency of words and cumulative quantity of words from length of words, since the greatest, the logarithm of cumulative frequency and the logarithm of cumulative quantity of words from the logarithm of length of words, since the greatest. For reception of adequate mathematical dependences experimental data resulted to cumulate and represented as logarithms. It is shown, that frequency of a word is inversely proportional to its length, the logarithm of lengths of words and is direct pr0oportional to cumulative frequency, cumulative quantity of words, logarithms: frequencies of words, quantities of words, cumulative quantity of words and cumulative frequency of words. The specified dependences investigated on the linear, sedate, logarithmic equations and polynoms of the second and third degrees. Relative speed in sedate dependence for the given dependences can be positive or negative and serves for an estimation of the concrete text. Logarithms of frequency are increased with reduction of length of words from 1,0986 up to 6,9275, the logarithm of quantity of words - from 1,0986 up to 3,5835, the logarithm of cumulative frequency - from 1,0986 up to 10,929 and the logarithm of cumulative quantity of words - from 1,0986 up to 9,1817. Thus the logarithm of length of words falls from 2,7726 up to 0. That is curves of logarithms of cumulative frequency and logarithms of cumulative quantity of words from the logarithm of length of words will be imposed against each other up to the logarithm of length of a word equal 2,7081, and then the plug is formed: the curve of the logarithm of cumulative frequency will lay above a curve of the logarithm of cumulative quantity of words.
Keywords: quantity of words, frequency of words, length of words, dynamics of quantity of words, dynamics of length of words, average length of words, cumulative quantity of words, cumulative frequency of words, modeling, linear dependence, sedate dependence, logarithmic dependence, polynoms of the second degree, polynoms of the third degree, plug

Web link: *www.IntellectualArchive.com/getfile.php?file=JB5gMAD7Jsq&orig_file=Dependence of frequency of words A.P. Ch_DsS_IA.docx*

ID #: 1018   **Social Sciences / History / History of religion**

Submitted on: Dec 07, 2012

Author: **Kamal-deen Olawale SULAIMAN**

Title: **Religious Education as Panacea to Youth Militancy in the Niger Delta of South Nigeria**

Abstract: One major problem besetting the Niger delta is youth militancy. Indeed, the region bordering the Niger Delta has been plagued with youth restiveness and this phenomenon has continually taken a heavy toll on human and material resources, peace and development. Suffice to say that it has given the region a toga of notoriety. Expectedly, one of the pressing and obviously daunting challenges facing political leaders and policy makers alike has been ways of stemming the preponderance of youths who seem to have taken militancy as a pastime. Specifically, the Niger Delta is one of the most research regions in Nigeria and there has a plethora of insightful analyses. However, a major area that needs to be further explored is the aspect of moral/religious education. Given the fact that Nigerians are naturally religious, it becomes evident that providing religious education to youths would go a long way in resolving the phenomenon of youth militancy.

Web link: *www.IntellectualArchive.com/getfile.php?file=5glNOkTOVfl&orig_file=Kamal-deen_Olawale_SULAIMAN__RELIGIOUS_EDUCATION_AS_PANACEA.pdf*

ID #: 991   **Literature / Internet articles / Analysis of literature**

Submitted on: Dec 12, 2012

Author: Yuri N. Klimov

Title: Dependence of lengths of words on frequency and quantity of words in verses of king of poets of the beginning of XX century I. Severjanin

Abstract: Total of words in verses I. Severjanin [1] is made 481, and with their frequency - 851 by a technique [2]. Quantities of words, logarithms of lengths of words from the logarithm of frequency, the logarithm of length of words from the logarithm cumulative frequencies, the logarithm of length of words from the logarithm of quantity of words and the logarithm of length of words from the logarithm of cumulative quantity of words are investigated dependence of length of words, since the greatest size, from frequency. For reception of adequate mathematical dependences experimental data resulted to cumulate and represented as logarithms. It is shown, that the length of a word is inversely proportional to its frequency, cumulative frequency, cumulative quantity of words and logarithms: frequencies of words, cumulative quantity of words and cumulative frequency of words. The specified dependences investigated on the linear, sedate, logarithmic equations and polynoms of the second and third degrees. Relative speed in sedate dependence for the given dependences can be positive or negative and serves for an estimation of the concrete text. Logarithms of frequency are increased with reduction of length of words from 0 up to 4,8675, the logarithm of quantity of words - from 0 up to 2,0794, the logarithm of cumulative frequency - from 0 up to 6,7464Đ¸ the logarithm of cumulative quantity of words - from 0 up to 6,1758. Thus the logarithm of length of words falls from 2,5649 up to 0. That is curves of logarithms of cumulative frequency and logarithms of cumulative quantity of words from the logarithm of length of words will be imposed against each other up to the logarithm of length of a word equal 2,1972, and then the plug is formed: the curve of the logarithm of cumulative frequency will lay above a curve of the logarithm of cumulative quantity of words.

Keywords: quantity of words, frequency of words, length of words, dynamics of quantity of words, dynamics of length of words, average length of words, cumulative quantity of words, cumulative frequency of words, modeling, linear dependence, sedate dependence, logarithmic dependence, polynoms of the second degree, polynoms of the third degree

Web link: *www.IntellectualArchive.com/getfile.php?file=6xJQKhuUnGn&orig_file=Dependence of lengths of words on frequency and quantity of words in verses of king of poets of the beginning of XX century I S_IA.docx*

ID #: 992   **Natural Sciences / Physics / Relativity**

Submitted on: Dec 12, 2012

Author: Florentin Smarandache

Title: New Relativistic Paradoxes and Open Questions

Abstract: Following the Special Theory of Relativity, Florentin Smarandache generalizes the Lorentz Contraction Factor to an Oblique-Contraction Factor, which gives the contraction factor of the lengths moving at an oblique angle with respect to the motion direction. He also proves that relativistic moving bodies are distorted, and he computes the Angle-Distortion Equations. He then shows several paradoxes, inconsistencies, contradictions, and anomalies in the Theory of Relativity. According to the author, not all physical laws are the same in all inertial reference frames, and he gives several counter-examples. He also supports superluminal speeds, and he considers that the speed of light in vacuum is variable. The author explains that the redshift and blueshift are not entirely due to the Doppler Effect, but also to the medium composition (i.e. its physical elements, fields, density, heterogeneity, properties, etc.).

Web link: *www.IntellectualArchive.com/getfile.php?file=Ml8auDrpqMm&orig_file=Florentin_Smarandache__NewRelativisticParadoxes.pdf*

ID #: 993   **Literature / Internet articles / Analysis of literature**

Submitted on: Dec 16, 2012

Author: Yuri N. Klimov

Title: Dependence of frequency of words on quantity of lengths of words and lengths of words in verses of king of poets of the beginning of XX century I. Severjanin

Abstract: The total of words in verses of king of poets of the beginning of XX century I. Severjanin [1] is made 481, and with their frequency - 851 by a technique [2]. Dependences of frequency of words on quantity of lengths of words, frequencies of words from quantity of lengths of words are investigated at length of a word from 13 up to 6 letters, quantity of lengths of words from length of a word, frequency of words from length of words on decrease, cumulative frequency of words and cumulative quantity of lengths of words from length of words, since the greatest, the logarithm of cumulative

frequency and the logarithm of cumulative quantity of lengths of words from the logarithm of length of words. For reception of adequate mathematical dependences experimental data resulted to Ñ umulate and represented as logarithms. It is shown, that frequency of a word is inversely proportional to its length, the logarithm of lengths of words and is direct proportional to cumulative frequency, cumulative quantity of lengths of words, logarithms: frequencies of words, quantities of words, cumulative quantity of lengths of words and cumulative frequency of words. The specified dependences investigated on the linear, sedate, logarithmic equations and polynoms of the second and third degrees. Relative speed in sedate dependence for the given dependences can be positive or negative and serves for an estimation of the concrete text. It is shown, that curve frequencies of quantity of lengths of words from length of words on decrease will be imposed against each other till length of a word to equal 9 letters, and then the plug is formed: the curve of frequency will lay above a curve of quantity of lengths of words. Logarithms of frequency are increased with reduction of length of words from 0 up to 4,8625, the logarithm of quantity of words - from 0 up to 2,0794, the logarithm of cumulative frequency - from 0 up to 6,7464 and the logarithm of cumulative quantity of words - from 0 up to 6,1758. Thus the logarithm of length of words falls from 2,5649 from up to 0. That is curves of logarithms of cumulative frequency and logarithms of cumulative quantity of lengths of words from the logarithm of length of words also will be imposed against each other up to the logarithm of length of a word equal 2,1972, and then the plug is formed: the curve of the logarithm of cumulative frequency will lay above a curve of the logarithm cumulative lengths of quantity of words. Keywords: quantity of words, frequency of words, length of words, dynamics of quantity of words, dynamics of length of words, average length of words, cumulative quantity of words, cumulative frequency of words, modeling, linear dependence, sedate dependence, logarithmic dependence, polynoms of the second degree, polynoms of the third degree, plug

Web link: *www.IntellectualArchive.com/getfile.php?file=XOHmAdA8ufd&orig_file=Dependence of frequency of words on quantity of lengths of words and lengths of words in verses of king of poets I. Severjanin_IA_2012docx.docx*

ID #: 994   **Natural Sciences / Physics / Quantum field theory**

Submitted on: Dec 16, 2012

Author: **Ervin Goldfain**

Title: **Challenges of Quantum Gravity and Higher-Dimensional Field Theories**

Abstract: We give a concise but incomplete list of reasons why these theories are likely to point in the wrong direction. For the sake of clarity and due to the large volume of research on these topics, no references are included. The interested reader can look for key words describing these references using Google Scholar or similar search engines.

Web link: *www.IntellectualArchive.com/getfile.php?file=dBFLnHlKrlP&orig_file=Challenges of Quantum Gravity and Higher-Dimensional Field Theories.pdf*

ID #: 1019   **Social Sciences / Sociology / Sociology of education**

Submitted on: Dec 18, 2012

Author: **Tovkanets A.V.**

Title: **Higher Education in the Internationalization**

Abstract: Today in the face of globalization internationalization and transnationalization of education and training stand out as the major global, civilizational trends. The basis of the globalization process are not material productive forces, but the scientific and technological knowledge, willingness and ability to use them to update the production, development and exploration of new markets, improvement of human health and the environment. In other words, globalization is the process of internationalization of planetary scale and received a new manifestation of transnationalization, i.e. interpenetration of economies and global scale. This issue faces higher education at this stage.

Web link: *www.IntellectualArchive.com/getfile.php?file=g0geQbfeYpi&orig_file=Tovkanets_A_V__Higher_Education_in_the_Internationalization.pdf*

ID #: 1016   **Natural Sciences / Computer Science / Analysis of algorithms**

Submitted on: Dec 19, 2012

Author: **I. Kurzheievskyi, Y. Tolmachova, A. Shumkova**

Title: **INCREASE OF THE CRYPTOSTRENGTH OF ELECTRONIC DIGITAL SIGNATURE SCHEME ELGAMAL WITH COMPOSITE MODULUS**

Abstract: This article deals with the questions of improving the cryptostrength of the algorithm of electronic

digital signature (EDS) ElGamal with a composite module, based on the complexity of solving the factorization problem. To improve the reliability of electronic digital signature schemes with a composite module authors suggest using an additional parameter `H, which is the hash value of the shared key users K, formed on the Diffie-Hellman parameters and signature r and S.

Web link: *www.IntellectualArchive.com/getfile.php?file=T3nFuKMKA5D&orig_file=I_Kurzheevskiy__INCREASE_OF_THE_CRYPTOSTRENGTH.pdf*

ID #: 1017   **Social Sciences / Communication / Linguistics**

Submitted on: Dec 20, 2012

Author: **Serhiy Danylyuk**

Title: **Information Culture as an Aspect of Formation of Future Philologists Professional Competence**

Abstract: The need to prepare an individual to live and work in conditions of information society imposes as one of the major problems, facing the education system, the task of laying the foundations of an individual`s information culture. Society`s need for skilled professionals who have the means and methods of Informatics becomes a leading factor in educational policy. Obviously, in this regard, future philologists should, first of all, have the appropriate level of information culture.

Web link: *www.IntellectualArchive.com/getfile.php?file=7KDSgMqoE6u&orig_file=Serhiy_Danylyuk__Information_Culture.pdf*

ID #: 1020   **Social Sciences / Communication / Linguistics**

Submitted on: Dec 20, 2012

Author: **Olena Vovk**

Title: **Communicative and Cognitive Approach to Teaching English to University Students**

Abstract: Contemporary methodology of teaching EFL is characterized by two main paradigms - communicative and cognitive. Within the framework of the communicative paradigm language and its analysis is connected mainly with acquisition of speech activity; within the framework of the cognitive paradigm language is related to cognition and processes associated with it. To solve a number of methodological problems a synthesis of the mentioned above paradigms is needed. That is why examining the contemporary strategy of teaching EFL we will consider the basic principles of both the communicative and the cognitive approaches.

Web link: *www.IntellectualArchive.com/getfile.php?file=DXW9LGBmhIL&orig_file=Olena_Vovk__Communicative_and_Cognitive_Approach.pdf*

ID #: 1014   **Social Sciences / Sociology / Sociology of education**

Submitted on: Dec 21, 2012

Author: **Afanas`eva L.I., Nikiforova T.I.**

Title: **The Forming of Viable Person in the Modern Conditions**

Abstract: The problems of education of young people at this stage of society are considered, the questions about the viability of the individual in terms of philosophy, psychology and pedagogy are analyzed.

Web link: *www.IntellectualArchive.com/getfile.php?file=Li0IvZKGdAf&orig_file=Afanaseva_L_I__The_Forming_of_Viable_Person.pdf*

ID #: 1015   **Social Sciences / Sociology / Sociology of education**

Submitted on: Dec 22, 2012

Author: **M. P. Androsova**

Title: **Development model of older preschoolers` dialogic communication in the modern pre-school educational institutions**

Abstract: In the article dialogue is seen as a communicative process, a particular kind of human activity, through that people interact with each other, transmit information, understand the state of a partner. Moreover, information communication between a child and an adult, a child and other children is underlined. We revealed approaches, forms and methods of dialogic communication of children in preschool education and give pedagogical conditions, contributing to this process.

Web link: *www.IntellectualArchive.com/getfile.php?file=LjPwXQURY4b&orig_file=Androsova__Development_model.pdf*

ID #: 1000   **Literature / Internet articles / Analysis of literature**

Submitted on: Dec 23, 2012

Author: **Yuri N. Klimov**

Title: **Dependence of lengths of words on frequency and quantity of words in I. Brodskiy`s poems: "Goncharov and Gorchakov " and "The Petersburg novel"**

Abstract: The total of words in I. Brodskiy`s poems "Goncharov and Gorchakov" and "The Petersburg novel" [1] is made together 4697, and with frequency-10003 by a technique [2]. Frequencies of words, cumulative frequency of words, cumulative quantity of lengths of words, the logarithm of frequency of words from the logarithm of length of words, the logarithm of quantity of lengths of words from the logarithm of length of words and the logarithm of cumulative frequency of words and the logarithm of cumulative quantity of lengths of words from the logarithm of length of words are investigated dependence of length of words, since the greatest size, from quantity of lengths of words. For reception of adequate mathematical dependences experimental data resulted to cumulate and represented as logarithms. 50 % of quantity of lengths of words equally 2348,5 at length of a word to equal 7 letters, and 50 % of frequency of words - 5001,5 at length of a word to equal 5 letters. It is shown, that the length of a word is directly proportional to the logarithm of length of a word and inversely proportional to its frequency, cumulative frequency, cumulative quantity of lengths of words and logarithms: frequencies of words, to cumulative quantity of lengths of words and cumulative frequency of words. The specified dependences investigated on the linear, sedate, logarithmic equations and polynoms of the second and third degrees. Relative speed in sedate dependence for the given dependences can be positive or negative and serves for an estimation of the concrete text. Logarithms of frequency are increased with reduction of length of words from 1,0986 up to 7,1, the logarithm of quantity of lengths of words - from 1,0986 up to 3,5264, the logarithm of cumulative frequency - from 1,0986 up to 9,2106 and the logarithm of cumulative quantity of words - from 1,0986 up to 8,4546. Thus the logarithm of length of words falls from 2,7725 up to 0. That is curves of logarithms of cumulative frequency and logarithms of cumulative quantity of words from the logarithm of length of words will be imposed against each other up to the logarithm of length of a word equal 2,6390, and then the plug is formed: the curve of the logarithm of cumulative frequency will lay above a curve of the logarithm of cumulative quantity of words. Presence of a plug for curve logarithms of cumulative frequency and logarithms of cumulative quantity of words from the logarithm of length of words is peculiar to all texts and differs for prose and poetry, and also for authors of various products.
Keywords: quantity of words, frequency of words, length of words, dynamics of quantity of words, dynamics of length of words, average length of words, cumulative quantity of words, cumulative frequency of words, modeling, linear dependence, sedate dependence, logarithmic dependence, polynoms of the second degree, polynoms of the third degree, plug

Web link: *www.IntellectualArchive.com/getfile.php?file=AfhhqJUZQLe&orig_file=Dependence of lengths of words GG_PP _ I. Brodskiy_IA_2012docx.docx*

ID #: 1003   **Natural Sciences / Physics / General Physics**

Submitted on: Dec 27, 2012

Author: **N. S. Tonchev and J. G. Brankov**

Title: **Some inequalities in the fidelity approach to phase transitions**

Abstract: We present some aspects of the fidelity approach to phase transitions based on lower and upper bounds on the fidelity susceptibility that are expressed in terms of thermodynamic quantities. Both commutative and non commutative cases are considered. In the commutative case, in addition, a relation between the fidelity and the nonequilibrium work done on the system in a process from an equilibrium initial state to an equilibrium final state has been obtained by using the Jarzynski equality.

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End of December 2012 bulletin