Power Regression as an Example of the Third Law of Hotels in Paris: Planets

Mikhail Mikhailovich Taenvat*
Department of State and Municipal Management of the Institute of Law and Management, Vladivostok State University of Economics and Service, Vladivostok, Russia

Abstract
All of the linear term regression model: Four ways too functional equation from the normal equations; obtaining normal equations from the functional equation by differentiation; variance analysis; extrapolation in Appell regression; improve the accuracy formula the isochronism; the number of Eulerian model; the statistical reliability, F-statistics; interpolation probabilities. All about power regression: four ways to display a functional equation of the normal equations; obtain the normal equations from the functional equation by differentiating; analysis of variance; extrapolation of the power of the regression flexicurity the accuracy with Juventus of the formula to My Short List’s third law Euler number: statistical reliability: F-statistics; interpolation of probabilities, MATLAB, the standard normal probability calculators.

Keywords: The formula; The isochronism; Functional equation; Normal equations; Differentiation; Variance analysis; Extrapolation; The number of Eulerian model; The statistical reliability; F-statistics; Interpolation probabilities; Formula of hotels in Paris third law; Functional equation; Normal equation; Differentiation; Analysis of variance; Extrapolation; Euler number; Statistical reliability; F-statistics; Interpolation of probabilities; MATLAB; Standard normal probability calculators.

Introduction
Use the regression in the physics celestial bodies

Sustainable related to statistics as to the stress hormones subject can overcome this article. In the minds of most statistics is fundamentally one of the parties-counting manufactured products, physical products, etc. But when such calculations may lead to the opening of world significance, statistics captures the spirit of the! (Figures 1 and 2).

The author as a child lived in a garrison. The toys were on paper, paper plants strategic missiles and thin, like mannequins, anti-aircraft missiles... But childhood continues. So "Astrology and John (Figure 1) was opened by the third act the motions of the planets, for which the current could get Nobel Peace prize, we can now for half an hour repeat his path, historically, as it was.

The author of the article "the laws isochronism" Mr. Chris Impery [1] noted: "The laws isochronism apply to any orbital movement, whether the planet around the Sun, the moon around the Earth, or stars around the center of the galaxy.

The second and third laws were not the result of isochronism attempts to find patterns in orbits planets. The second and third laws isochronism studying mathematical relationship between the distance the planet from the Sun and the speed it is moving around the sun. Both of these are consequences of the application of the law of gravity and Newton’s law of conservation since the pulse object, moving on an elliptic trajectory, but "Astrology surprisingly was able to get them without any of these notions!"

But the essence of and those quantitative steps in any items after math processing may result in an important opening and for you. No same any items? This is Sachs [2] produced calculations in health-biological laboratory; you can take it in any other laboratory.

Figure 1: John Kepler (1571-1630) German mathematician, astronomer, mechanics, optician and astrologer, the discoverer of the laws of motion of the planets of the solar system.

Source: Johannes Kepler [4].

Figure 2: The planets in the solar system.

*Corresponding author: Mikhail Mikhailovich Taenvat, Department of State and Municipal Management of the Institute of Law and Management, Vladivostok State University of Economics and Service, Vladivostok, Russia, Tel: +7 950 2920795; E-mail: hh.dd.00@mail.ru

Received May 04, 2015; Accepted September 07, 2015; Published October 15, 2015

Citation: Taenvat MM (2015) Power Regression as an Example of the Third Law of Hotels in Paris: Planets. J Astrophys Aerospace Technol 3: 124. doi:10.4172/2329-6542.1000124

Copyright: © 2015 Taenvat MM. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.
Methodology

Dr. Mathews and Dr. Fink presented [3] resulted in an excellent example of the use of a regression line: “Applications of numerical techniques in science and engineering involve curve fitting of experimental data. For example, in 1601, the German astronomer Johannes Kepler formulated the third law of planetary motion [4], experimental data. For example, in 1601, the German astronomer Johannes Kepler formulated the third law of planetary motion [4],

\[ T = \sqrt[3]{x^3} \]

where \( x \) is the distance to the Sun, measured in millions of kilometers, \( T \) is the orbital period measured in days, and \( C \) is a constant.

The observed data pairs \((x, T)\) for the first four planets, Mercury, Venus, Earth and Mars, are \((58; 88), (108; 225), (150; 365), (228; 687)\), and the coefficient \( C \) obtained from the method of least squares is \( C = 0.199769 \). The curve is not required. The curve

\[ y = 0.199x^{3/2} \]

and the data points are shown in Figure 3.”

The authors present a power adjustment: “Let us suppose that

\[ y = ax^b \]

\[ y = a + bx + cx^2 \]

and the coefficient \( C \) obtained from the method of least squares is \( C = 0.199769 \). The curve

\[ T = 0.199769x^{3/2} \]

and the data points are shown in Figure 3.”

The original data for the coefficient as well.

\[ y = a + bx + cx^2 \]

\[ T_a \text{enva}t MM (2015) Power Regression as an Example of the Third Law of Hotels in Paris: Planets. J Astrophys Aerospace Technol 3: 124.

\[ \text{Source: Sachs [2].} \]

\[ y = a + bx \]

Table 1: The original data for the coefficient as well.

|   |   |   |
|---|---|---|
| 58 | 88 | 441.7148 |
| 108 | 225 | 1122.369 |
| 150 | 365 | 1837.117 |
| 228 | 687 | 3442.725 |

Table 2: Normal equations for the most important functional equations.

Source: John [3].

Figure 3: The least squares fit \( T = 0.199769x^{3/2} \) for the first four planets, using Mr. Kepler’s third law of planetary motion.

J Astrophys Aerospace Technol
ISSN: 2329-6542  JAAT, an open access journal

Volume 3 • Issue 2 • 1000124

Source: Taenvat MM (2015) Power Regression as an Example of the Third Law of Hotels in Paris: Planets. J Astrophys Aerospace Technol 3: 124.
doi:10.4172/2329-6542.1000124
Logarithm to base 2 - \( \log_2 \) (binär):

\[
\begin{align*}
\log_2 1 &= 0,301029996 \\
\log_2 2 &= 1,000000000
\end{align*}
\]

\[
x \log_2 x = \frac{x \log_2 10}{\log_2 10} = \frac{x \log_2 10}{\log_{10} 2} = \frac{\log_{10} x}{\log_{10} 2} = \frac{\log_{10} x}{0,301029996} = 1,000000000 \log_{10} x
\]

\[
\begin{align*}
\log_{10} 1 &= 0,000000000 \\
\log_{10} 2 &= 0,301029996
\end{align*}
\]

\[
\begin{align*}
\log_{10} 58 &= 1,763428 \log_{10} 2 \\
\log_{10} 108 &= 2,033424 \log_{10} 2 \quad \text{Table 4:} \quad x \log_{10} x = \frac{x \log_{10} 10}{\log_{10} 2} = \frac{\log_{10} x}{\log_{10} 2} \quad \text{X} \quad \text{y} \quad \text{lnx} \quad \text{lny} \quad \text{ln(x^2)} \quad \text{lnx*lny} \\
\log_{10} 150 &= 2,176091 \log_{10} 2 \\
\log_{10} 228 &= 2,562293 \log_{10} 2
\end{align*}
\]

Equations system of the selection can be solved by Gaussian elimination, the decomposition of the triangular matrix or matrix, but saving a place, we will use the calculator equations: answer:

\[
E(a,b) = \sum_{k=1}^{n} (a + b \log_{10} x - \log_{10} y)^2.
\]

Since we have two variables \(a\) and \(b\) - take private derivative works.

Hold \(b\) fixed, differentiate \(E(a,b)\) with respect \(a\), and get

\[
E(a,b) = \sum_{k=1}^{n} (a + b \log_{10} x - \log_{10} y)^2.
\]

Now hold a fixed and differentiate \(E(a,b)\) with respect \(b\), and get (Table 5)

\[
E(a,b) = \sum_{k=1}^{n} (a + b \log_{10} x - \log_{10} y)^2.
\]
Since $106513.2 \geq 18.51282051$ and $9.39E-06 \leq 0.05$, the zero hypothesis is rejected. And further, since $326.3635 \geq 4.30265273$, and $9.39E-06 \leq 0.05$, the zero hypothesis is rejected (Figure 4).

Homoscedasticity has not been identified.

The model will take a view:

$$\begin{align*}
\ln(x) &= a + bx \\
\ln(x)^2 &= a + bx
\end{align*}$$

Table 6: The third option baseline data for the coefficients under normal equations.

The outcome of the withdraw

Table 7: Summary regression analysis depending on period completing the first four planets, which used Mr. Kepler, on the distance to the Sun (exponential model), which was established by using the Microsoft Office Excel 2007.

| DF  | SS   | MS   | F    | The significance F |
|-----|------|------|------|--------------------|
| Regression models | 1   | 2.251954 | 2.251954 | 106513.2 | 9.39E-06 |
| The Balance | 2   | 4.23 E-05 | 2.11 E-05 |  |  |
| Total | 3   | 2.251996 | | | |
| Y-intersection | -1.61083 | 0.022157 | -72.7004 | 0.000189 | -1.70617 |
| ln(x) | 1.499748 | 0.004595 | 326.3635 | 9.39 E-06 | 1.479976 |

Table 8: The limit values F and t-statistic.

| One-Tail F-Test | Two-Tail Test |
|-----------------|--------------|
| Critical Value  | 18.51282051  | -4.30265273 |
| Lower Critical Value | -4.30265273 |  |
| Upper Critical Value | 4.30265273 |  |

Figure 4: The Schedule balances.
Heteroscedasticity in Figure 5 and Table 11. Since $437091.8 \geq 18,512,820.51$, and $2,29E-06 \leq 0.05$, the $95\%$ reliability zero hypothesis is rejected. And further, since $661,129.2 \geq 4,302,652.73$, and $2,29E-06 \leq 0.05$, the zero hypothesis is rejected.

So, as expected, more than was possible Кеплеру exact formula:

$$\exp(-1.58024) = 0.20592567.$$

We will do the job “b” (Figure 6, Tables 12 and 13).

Since $9801780 \geq 5,591,447,848$ and $8,96E-23 \leq 0.05$, $95\%$ reliability zero hypothesis is rejected. And further, since $3130,779 \geq 2,364,624,251$, and $8,96E-23 \leq 0.05$, the zero hypothesis is rejected (Figure 7).

Since there is a definite гомоскедастичность, conclusions call for caution.

So, the most accurate formula, which we have been able to calculate:

$$\exp(-1.603165) = 0.201258526;$$

### Table 9: The distance nine planets from the Sun and their star period in days.

| Planet      | Distance from Sun (km $\times$ 10^6) | Sidereal period (days) |
|-------------|--------------------------------------|-------------------------|
| Mercury     | 57.59                                | 87.99                   |
| Venus       | 108.11                               | 224.7                   |
| Earth       | 149.57                               | 365.26                  |
| Mars        | 227.84                               | 686.98                  |
| Jupiter     | 778.14                               | 4332.4                  |
| Saturn      | 1427                                 | 10759                   |
| Uranium     | 2870.3                               | 30684                   |
| Neptune     | 4499.9                               | 60188                   |
| Pluto       | 5909                                 | 90710                   |

Source: John and Kurtis [3].

### Table 10: Summary regression analysis depending on the period completing the first four planets, which used Dr. Mathews and Dr. Fink, on the distance to the Sun (exponential model), which was established by using the program Microsoft Office Excel 2007.

The F - statistics with 1 and 7 degrees of freedom and largest errors

$$T = 0.201258526 \times x^{1.4988974}.$$

The F - statistics with 1 and 7 degrees of freedom and largest errors

$$\alpha = 0.00000000000000000000000896$$ as well $9801780$, with $0.9999999999999999999104$ reliability of the null hypothesis is rejected.
1,11607E + 24 attempts to account for 1 failure. And if we use the first 1000 digits to the right of the decimal point in the number of e (Figure 8), the majority of which the program Microsoft Office Excel does not use, by allowing, as writes Mathews rounding error (3, C. 39), you can speak to the good prospects for success in planetary flights.

The third law isochronism (9): “The squares periods of planets

\[ y = 0.201x^{1.498} \]

\[ R^2 = 1 \]

\[
\begin{align*}
0 & \quad 1000 & \quad 2000 & \quad 3000 & \quad 4000 & \quad 5000 & \quad 6000 & \quad 7000 & \quad 8000 & \quad 9000 & \quad 10000 \\
\text{Star period (days)} & \quad 0 & \quad 1000 & \quad 2000 & \quad 3000 & \quad 4000 & \quad 5000 & \quad 6000 & \quad 7000 & \quad 8000 & \quad 9000 & \quad 10000 \\
\end{align*}
\]

Figure 6: The least-squares fit \( T = 0.201x^{1.498} \) for the all nine planets, using Mr. Mathews and Mr. Fink third law of planetary motion.

The outcome of the withdrawal

Regression statistics

|                          |       |       |       |       |
|--------------------------|-------|-------|-------|-------|
| Multiple R               | 0.9999996 |
| R-square                 | 0.9999993 |
| Normalized R-square      | 0.9999992 |
| Standard error           | 0.0023366 |
| Monitoring               | 9     |

Variance analysis

| DF | SS   | MS   | F     | The significance F |
|----|------|------|-------|--------------------|
| 1  | 53.51453 | 53.51453 | 9801780 | 8.96 E-23          |
| 7  | 3.82 E-05 | 5.46 E-06 |        |                    |
| 8  | 53.51457 |       |       |                    |

| Rates | Standard error | T-statistics | P-value | The lower 95% |
|-------|----------------|--------------|----------|--------------|
| Y-intersection | -1.603,165 | 0.00319 | -502,587 | 3.26 E-17 | -161,071 |
| ln(x)   | 1.4988974   | 0.000479 | 3,130,779 | 8.96 E-23 | 1.497765 |

The balance

| Monitoring | Predicted In(y) | The residue |
|------------|-----------------|-------------|
| 1          | 4.4723886       | 0.004835    |
| 2          | 5.4163946       | -0.00163    |
| 3          | 5.9029596       | -0.00235    |
| 4          | 6.5338142       | -0.00151    |
| 5          | 8.3748542       | -0.00998    |
| 6          | 9.2838202       | -0.00032    |
| 7          | 10.331313       | 0.000184    |
| 8          | 11.005276       | -4.7E-05    |
| 9          | 11.413607       | 0.001816    |

Source: https://en.wikipedia.org/wiki/E_(mathematical_constant) [5].

Figure 8: The first 1000 digits to the right of the decimal point in the number of e.

Table 12: Summary regression depending on the completion of all 9 planets in orbit on the distance to the Sun (exponential model), with the use of modern data, created by using the program Microsoft Office Excel 2007.
around the Sun are, as well as Cuba large spindles orbits planets. It is true not only for planetary exploration, but also for their satellites.

\[ \frac{T^2}{a^3} = \text{const}; \quad (2) \]

Where \( T \) - Periods of planets around the Sun, as well as well - the length large spindles their orbits.

So, the formula the third act with increasing accuracy.

\[ T = 0,199721776x^{1,4909748}; \]
\[ T = 0,205925673^{1,4909481}; \]
\[ T = 0,201258526x^{1,4988974}. \]

Make the conversion, having the formula (2):

\[ T^2 = 0,201258526x^{2,9977948}; \]
\[ T^2 = 0,201258526x^{2,9977948}; \]
\[ T^2 = 0,201258526x^{2,9977948}; \]

We have an obligation to consider and competing option.

\[ T = 0,201258526x^{2,9977948}; \]
\[ T = 0,201258526x^{2,9977948}; \]
\[ T = 0,201258526x^{2,9977948}; \]

Dr. Mathews and Dr. Fink [3] notes that: "In the practice of numerical analysis it is important to be aware that computed solutions are not exact mathematical solutions. The precision of a numerical solution can be diminished in several subtle ways. Understanding these difficulties can often guide the practitioner in the proper implementation and/or development of numerical algorithms (3, C. 37-38)".

Find absolute and relative error:

\[ E_A = \left| x - x \right| = 3 - 2,9977948 = 0,0022052; \]
\[ R_A = \frac{\left| x - x \right|}{x} = \frac{3 - 2,9977948}{3} = 0,000735067. \]

So, numerically error, not overwhelming. But, as pointed out Dr. Mathews and Dr. Fink [3]: "Error may spread in the follow-up calculations". Next, we can completely eliminate this error, by using formula (1), but for this we will need to pay a distortion factor «A»...

\[ e = \frac{1}{\text{e}_-} \]
\[ (\text{e}_- \neq 0) \]

\[ e \approx 2,718281 \text{ (limit number e} \text{)} \]

\[ \frac{1}{1} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{4} \times \frac{1}{4} \times \frac{1}{4} \text{...} \approx 2,70833333. \]

What means 99,99 999 999 999 999 999 104% reliability? This means that when throwing coins seventy threefold in a row the emblem is still permitted as likely, while seventy fourfold has already been considered as a ‘over random’. By the theorem of probability for independent events the probability equal to:

\[ P_{9,99} = (\frac{1}{2})^4 = 0,06250(0,05); \]
\[ P_{9,99} = (\frac{1}{2})^5 = 0,03125(0,05); \]
\[ P_{9,99} = (\frac{1}{2})^6 = 0,0000152889,39 \times 10^{-6}; \]
\[ P_{9,99} = (\frac{1}{2})^7 = 0,00000762939,39 \times 10^{-6}; \]
\[ P_{9,99} = (\frac{1}{2})^8 = 3,8147 \times 10^{-6}2,29 \times 10^{-6}; \]
\[ P_{9,99} = (\frac{1}{2})^9 = 1,90735 \times 10^{-6}2,29 \times 10^{-6}; \]
\[ P_{9,99} = (\frac{1}{2})^{10} = 1,05879 \times 10^{-22}8,96 \times 10^{-23}; \]
\[ P_{9,99} = (\frac{1}{2})^{11} = 5,29396 \times 10^{-23}(8,96 \times 10^{-23}). \]

I.e. approximately 0,105879E-20% and 0,529396E-21%. So, the statistical reliability 99,99 999 999 999 999 999 104% means that accidental emergence circumstances equally incredible, as well as and the event, consisting of the landing emblem in a row 74 times. The likelihood that, when n-purchasable throwing coins each time will fall out emblem, is equal (1/2)n. And is listed in the following table. This is well stated in the 2"(Tables 14 and 15).

Table 15: Supplement to Table 14.
And here we can show how important it is knowledge binary logarithm:

\[ \log_{10} 0.00000762939 = -17. \]

Dr. Lothar Sachs points out: "If we choose a factor in this, saying that the 95% is the correct and only in 5% wrong, we say: with the statistical reliability S in 95% confidence interval a custom statistics includes the parameter general population". In summary, you want to say: we have 5% - s chances to reject a valid factor equation and the 95% - s - to take is also a valid factor [5-8].

**Interpolation Probabilities**

This method computational complexity (2, with. 152) The value of F-test for \( v_1 \) and \( v_2 \). Degrees of Freedom offered. What is it for? In special cases, above all, when target is dangerous to human life, it is necessary to take smaller, than \( \alpha=0,001 \) errors. Thus, for example, in the manufacture of vaccines required limit constant anti-serum. Not in fallible measurements must be detected and eliminated. Dr. Sachs notes that: "An unreasonable decision null-hypothesis "anti-serum is correct" means a dangerous error" (2, C. 114). Null-hypothesis - the hypothesis that the two together, the issues from the point of view of one or more signs, are identical, i.e., the actual difference is equal to zero, and the found from experience unlike the zero is random in nature. The average of the \( \mu \). The general aggregate, evaluated on the basis random sampling, is not different from the desired values \( \mu \). And further Sachs writes that science makes a cell network, all less than in order to continuously extend and check all the new hypotheses, the most accurate and the most credibly explaining this world. Gamma is the findings and conclusions will never be totally reliably, but they are engaged in the preliminary hypotheses go all the more general and strict theories, a thorough test, have led to a better understanding and peace paradigm (2, C. 112). A summary table value \( F=106513,2 \), \( 437091,8 \) and \( 9801780 \).

The limits on both ends of normal distribution. In Tables 7, 10 and 12 and meaningful probability is defined as the area, the corresponding which is true for the number of degrees of freedom, not less than three successfully exploited this an approximation, the proposed [9,10], (2, P. 152), and in particular for values with a \( P>0.1 \), an attacker who successfully exploited this an approximation, the proposed [9,10], which is true for the number of degrees of freedom, not less than three (the greater number of degrees of freedom, the better approximation), and meaningful probability is defined as the area, the corresponding z-the limits on both ends of normal distribution. In Tables 7, 10 and 12 f-value, equal to 106513.2, 437091.8 and 9801780.
Figure 9: Interactive Builder standard normal probability plots.

Figure 10: Standard normal probability Calculator [11].

Figure 11: Standard normal probability Calculator.

Figure 12: Standard normal probability Calculator.

Figure 13: Standard normal probability Calculator.
Figure 15: Standard normal probability Calculator.

Figure 16: Standard normal probability Calculator.

Figure 17: Java Normal Probability Calculator high Power.

Figure 18: The window (15) shader graph normal distribution for 99,999 9999% reliability.

\[ z = \left(1 + \frac{2}{9 \times 7}\right) \times 9801780^{1/3} - \left(1 - \frac{2}{9 \times 1}\right) \]

\[ = 5,769823. \]

Now it remains to substitute the values found in Table 17. The probabilities are respectively equal to 0,00052 and 0,00048. Substitution in java normal probability calculator (Figure 16) provides answers 0,0 005 141 833, 0,0 004 799 659 and 0,0 000 000 039.

On the Figure 17 area under the curve normal distribution from \( z \) to \( \infty \) probability that the variable \( Z \) will take the value \( z \) \( P<0,0 \) 000 000 039. Since:

\[ \mu \pm 1,96\sigma, \text{or} \ z = \pm 1,96 \text{cover 95\% whole area} \]

\( (P = 0,025; 0,025 \times 2 = 0,05; 1 - 0,05 = 0,95) \) and

\[ \mu \pm 3\sigma, \text{or} \ z = \pm 3 \text{cover 99,73\% whole area} \]

\( (P = 0,0013; 0,0013 \times 2 = 0,0026; 1 - 0,0026 = 0,9974) \) and

\[ \mu \pm 5,769823\sigma, \text{or} \ z = \pm 5,769823 \text{covered at least 99,999999192\% whole area} \]

\( (0,00000000039 \times 2 = 0,0000000078; 1 - 0,0000000078 = 0,9999999922). \)

Since \( z = 5,769823 \), likelihood of errors \( \alpha = z \)

\( 2=0,0000000039 \times 2=0,0000000078 \) hence the statistical reliability \( S=1 - \)
Find \( F \) for:

\[
F \frac{\nu_1}{\nu_2} = \frac{1}{\nu_1} = \frac{1}{\nu_2}.
\]

For a ratio of 1 to easily calculate the \( F \) with a known \( F \). If given \( \nu_1 = 1 \), \( \nu_2 = 2 \), \( \alpha = 0.05 \), \( F = 18.51 \). Find for: \( \nu_1 = 1 \), \( \nu_2 = 2 \), \( \alpha = 0.05 \), \( F = 199.5 \) (2, C. 138-149), where a search value equal to 1/199.5 = 0.00051. The program Microsoft Office Excel provides the answer \( F = 0.00512531 \). A method of getting the data manually is still necessary because of the computer crashes, the lack of power sleep, as it was in Abkhazia.

**Conclusion**

In conclusion, it should be noted that the reliability \( S = 99,999 \) \( 0.01% \), obtained for legacy Kepler equation even today sounds, because the default is used \( S = 95% \). Starting rocket to Mars, you will receive the error \( a = 9.39E-04 \) - the missiles will not be different, but good will. Why is the same not excellent? Mathews is responsible (3, C. 49-50): 'many real data contain uncertainty or error. This error type is treated as noise. It affects the accuracy for any numerical calculations, which are data. Improving the accuracy is not achieved when successful calculations, using noisy data'.

Submitted by Dr. Mathews source, as expected, in the job "a" have greatly reduced error; in the job "b" error on the merits has no
disappeared. But the relationship has become less stochastic and more functional [11].

Dr. Uotshem and Dr. Parramou [12] say that the new literature and new methods for applying quantitative techniques, previously used only in physics, at the same time, regurgitation and adapting technology quantitative analysis to the economy. But many economists should be ready to be done and the return path is to raise agriculture and to rebuild factories.

It will be recalled that, and nonlinear models are acceptable for the calculations in the economy. This is difficult, but Russians traveling medicine in Germany and the "MAZ" do not equal "Mercedes" largely on errors in the calculations.

References

1. Winston WM (2005) Microsoft Excel: an analysis of the data and building business models: front with imp. Russian editorial, with.: il. + CD-ROM, 576.
2. Sachs L (1976) Statistical estimators, Fr. with it. Moscow, Statistics 598.
3. John MH, Kurtis DF (2001) Numerical methods, Using MATLAB, (3rdedn), Front with imp, The publishing house Williams, Moscow.
4. http://kepler.nasa.gov/Mission/JohannesKepler/
5. https://en.wikipedia.org/wiki/E_(mathematical_constant).
6. http://m.teachastronomy.com/astropedia/article/Keplers-Laws.
7. Zinger A (1964) On interpolation in tables of the F-distribution. Journal of the Royal Statistical Society. Series C (Applied Statistics) 13: 51-53.
8. http://davidmlane.com/hyperstat/z_table.html.
9. Paulson E (1942) An approximate normalization of the analysis of variance distribution. Ann Math Statist 13: 233-235.
10. http://www.psychstat.missouristate.edu/introbook/sbk00.htm.
11. http://www.stat.berkeley.edu/~stark/SticiGui/Text/clt.htm.
12. Uotshem K, Parramou M (1999) Quantitative methods in finance, school. Allowance for students: Front with imp. Finance unity 527.