

To:
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Dr. Lihua Zhou and Dr. Meng Li
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From:
Yuriy Zhivotov
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Dear Dr. Lihua Zhou and Dr. Meng Li!

G. Kirchgoff believed that the problem of mechanics is reduced to description of motions, rather than to discovering causes of these motions.

This approach has evidently found its application in creation of the theory of rotor dynamics. Attempts to draw a pattern for forces affecting the rotor and obtain generic dynamic equations were not successful.

The problem of rotor dynamics was interpreted as "bending vibrations of a bend shaft", thus opening the gate for application of the theory of vibrations. But some contradictions were overlooked. In fact, the rotor itself does not vibrate, it is the rotor supports or the machine frame that vibrate. As it is generally seen, alternating extension and contraction of fibers are specific for vibrations of a beam or a tuning fork plate. The rotor shaft is characterized only by monodirectional bend. Despite of problems in understanding of physics of the process the "vibrational" theory of rotor dynamics contributed to solving many an industrial problem. However it revealed some internal contradictions.

For example, five mutually exclusive equations were successfully used to describe dynamics of the same disk rotor. Instead of explanation of physics of the rotor self-alignment process, a statement followed on the rotor self-alignment as a result of analysis of the above equations.

Sommerfeld effect was registered but not explained from the position of physics. The equation of rotor dynamics for pure torque imbalance was not derived as well as the dynamic equation for a disk rotor with torque and static imbalance combined.

All magnitudes appearing in well-known equations are generally linearized to such an extent that the solutions are quite theoretical.

The theory of rotor balance in its essence is an inverse problem of dynamics. However, identification of rotor imbalances is considered a brand new problem in a qualitative sense. The above information is a specific explanation of reasons laying the foundation for a new theory of rotor dynamics based on a new understanding of nature and physics of processes.

The new theory of rotors is evolving. We believe the efforts in this direction are sufficient to discuss this theory on the international level. The theory was approved by Ukrainian scientists. We are ready to make a series of research papers on the subject ready for publishing in relevant international magazines. We are also ready to contribute to international conferences.

The international conference is devoted to rotor dynamics. As we might expect, our paper will be of professional interest for the participants of the Conference. We are sending you the Abstract "New Theory of Rotor Dynamics: Rotor Dynamics with Moment Disbalance" in electronic copy and 2 hard copy/

We would like you to kindly review the abstract to our paper.

We are waiting for your response.

Best regards, Yuriy Zhivotov.

Enclosure: Abstract.

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Dear Dr. Lihua Zhou and Dr. Meng Li!

We kindly ask you do inform us about the results of consideration of the Abstract to the article "New Theory of Rotor Dynamics: Rotor Dynamics with Moment Unbalance.

The Abstract was sent to you by post mail and e-mail on April 8, 2002.

Best regards,

Yuriy Zhivotov

Deputy Chief Engineer

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Dr. Meng Li & Dr. Z. X. Xiang
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Dear Colleague,

On behalf of the Organizing Committee, we would like to invite you to submit a complete manuscript for the 11th World Congress of IFToMM. We would also like to inform you that the paper submission schedule of the Congress in 2003 has been changed according to the decision of the 34th meeting of the Executive Council of IFToMM. The new Important Dates is listed below, and are also released on the Website of the Congress (<http://www.iftomm2003.com>). We hope that it will be more convenient for you to follow this schedule.

Please distribute this message to as many other colleagues as possible who are interested in the Congress.

Yours Sincerely,

Dr. Z. X. Xiang and Dr. Meng Li

Important Dates

By October 31, 2002

- Full manuscript reception following the format of the downloadable template to the Organizing Committee (iftomm@public.tpt.tj.cn)

By March 1, 2003

- Notification of acceptance of the full manuscript for review will be sent to all authors by post together with the reviewers' comments for modification, registration form, and the Third Announcement.

By April 15, 2003

- Deadline for final manuscript reception for the proceedings
- Application for the Young Delegates Program will be completed.

By May 15, 2003

- Delivery of the Preliminary Program by post to all authors
- Notification of the result of the assistance by the Young Delegates Program



Organizing Committee of the 11th World Congress in Mechanism and Machine Science
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The Second Announcement

*The Eleventh World Congress in Mechanism and Machine Science
August 18-21, 2003, Tianjin China*

Paper Number:	Rd10
Title:	New Theory of Rotor Dynamics: Rotor Dynamics with Moment Disbalance
Authors:	Alexander Zhivotov

Dear Colleagues,

Your abstract of the above mentioned paper has been accepted for presentation at *the Eleventh World Congress in Mechanism and Machine Science*, to be held in Tianjin, China on the basis of the summary you submitted.

The complete paper will be reviewed by the appropriate Technical Committee or Permanent Commission of IFToMM when submitted. A final decision on whether the paper is accepted for publication will be notified at the January 31st, 2003 together with the reviewers' comments for modification. The Third Announcement, including the information about accommodation, transportation, and registration will also be released at the same time (see also the Web: <http://www.iftomm2003.com>).

The criteria described in the Instructions to Authors, available on our Website (<http://www.iftomm2003.com>), under the heading 'Paper Submission' must be strictly followed when preparing and submitting the complete paper.

As decided by the Organizing Committee, electronic files of the paper in both pdf-format and Microsoft WORD format should be sent as attachments of an e-mail message to the IFToMM 2003 Secretariat, (iftomm@g.public.tpt.tj.cn). If you have any problem to create a pdf-file, please contact with the Secretariat, (iftomm@public.tpt.tj.cn). For those authors who have no email system available, please copy the electronic files on disc(s) (3.5", 1.44M or readable laser disc) and send to the Secretariat by mail. One printed copy is also required.

The deadline for the receipt of the complete paper by e-mail (mail) + one hard copy of the paper at the IFToMM 2003 Secretariat (School of Mechanical Engineering, Tianjin University, Tianjin 300072, China) is September 30th, 2002. The papers delivered after this date *will not be accepted*. Deadline of the final manuscript submission is March 31st, 2003.

Please do not send by fax your paper: it is useless and will not be taken into account as the receipt of your paper.

Publication of an accepted paper in the Proceedings is on the basis that at least one of the authors must make presentation of the paper at the Congress.

In the case where more than two papers having the same name as either the principal author or the co-author, publication fee of 150US\$ for each additional paper will be charged provided that only one of the authors will present at the Congress. Otherwise, the paper *will not be published* in the Proceedings.

With our best regards,

Tian Huang
Chair of IFToMM 2003

Chair: Prof. Tian Huang

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Dear Chair: Prof. Tian Huang !

We are sending you the paper “New Theory of Rotors Dynamics: Rotor Dynamics with Moment Unbalance”

in electronic copy,

in hard copy.

The hard copies of the document are sent by common mail and airmail.

We would like you to kindly review the paper.

Please, confirm reception of the letter.

The appendix: paper

Best regards!

Yuriy Zhivotov

Deputy Chief Engineer

“Yuzhnoye” State Design Office