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ABSTRACTS FROM EAST EUROPEAN
SCIENTIFIC AND TECHNICAL JOURNALS

No. 125

- Electronics, Engineering, and Space Research Series -

This report consists of abstracts of articles from the
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the table of contents below.

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Bulletin de l'Academie Polonaise des Sciences. Serie
des Sciences Techniques, Warsaw, Vol 10, No 11, 62

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POLAND

MILEWSKI J. and SMIGIELSKI J., Institute of Fluid Flow Machinery at the Polish Academy of Sciences (Instytut Maszyn Przeplywowych, PAN), Gdansk.

"Some Experimental Results on the Feasibility of Direct Conversion of Thermal Energy into Electricity by Magneto-Gas-Dynamic Methods".

Warsaw, Bulletin de l'Academie Polonaise des Sciences, Serie des Sciences Techniques Vol X, No 11, 1962; pp 429-433.

Abstract [English article; authors' summary in Russian, modified]: The article gives a general survey of M-G-D generators developed and tested in the USA, the USSR and Great Britain. There follows a description of plasmatron-generator sets built and tested in Poland. Three models are discussed, their basic features revealed, such as materials and operating parameters; finally, all tests and measurements are summarized and listed systematically.

Twenty one bibliographic references are cited thirteen Polish, one Russian and seven American.

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POLAND

WIECKOWSKI J., Institute of Fluid Flow Machinery at the Polish Academy of Sciences (Instytut Maszyn Przeplywowych, PAN), Gdansk.

"On Certain Dynamic Properties of an Elastic Bar Immersed and Non-Immersed in a Liquid with Free Surface".

Warsaw, Bulletin de l'Academie Polonaise des Sciences, Serie des Sciences Techniques Vol X, No 11, 1962; pp 435-441.

Abstract [English article; author's summary in Russian, modified]: The article deals with the selection of subsoil for foundation so that vibrations excited by installed machines should disappear. The problem is analyzed in terms of 1) a non-immersed semi-infinite bar vibrating flexurally, and 2) a finite bar immersed in an infinite mass of ideal liquid with free surface and homogeneous gravitational field. The analysis is carried out by solving the equations of velocity potential and the deflection line.

Eighteen bibliographic references are listed: thirteen Polish, three Russian and two German.

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POLAND

WIECKOWSKI J., Institute of Fluid Flow Machinery at the Polish Academy of Sciences (Instytut Maszyn Przeplywowych, PAN), Gdansk.

"The Effect of Compressibility on Hydrodynamic Damping and Reduced Mass of a Liquid with Free Surface Contained in a Homogeneous Gravitational Field".

Warsaw, Bulletin de l'Academie Polonaise des Sciences, Serie des Sciences Techniques Vol X, No 11, 1962; pp 443-449.

Abstract [English article; author's summary in Russian, modified]: The article analyzes the influence of compressibility on hydrodynamic reaction forces on the surface where steady state vibration is induced. This analysis shows, that compressibility cannot be always disregarded in vibrations of elastic media. It is shown, that the coefficients of hydrodynamic damping and reduced mass are not uniformly convergent for angular frequencies $\omega \in (0, \infty)$. Actual numerical values are given for water as a typical example. Seventeen bibliographic references are listed: nine Polish, seven Russian and one American.

1/1

POLAND

ORKISZ J., Department of Strength of Materials and Statics, Technical University (Katedra Wytrzymałości Materialow i Statyki, Politechnika), Krakow.

"Interaction Curves for Multi-Point Equivalent Cross-Sections of Elastic-Plastic Beams".

Warsaw, Bulletin de l'Academie Polonaise des Sciences, Serie des Sciences Techniques Vol X, No 11, 1962; pp 451-460.

Abstract [English article; author's summary in Russian, modified]: The article deals with the effect of axial forces on elastic-plastic deflections of bars. This effect is examined by means of interaction curves for a more general case of multi-point cross-sections. The region of validity is established for equation

$$k = AL + BN + C \quad \text{where}$$

k - beam curvature, L - bending moment, N - axial force. Also possible cases of yielding are considered. The solutions are limited in respect to unloading. Interaction curves are shown on an example of the equivalent four-point cross-section.

Nine bibliographic references are listed: three Polish, three Soviet, and three American.

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POLAND

LITWINISSYN J., Laboratory of Rheology, Institute of Fundamental Technical Problems at the Polish Academy of Sciences (Pracownia Reologii, Instytut Podstawowych Problemow Techniki, PAN).

"The Expected Value of the Coordinates of the Subsidence Trough in a Granular Body".

Warsaw, Bulletin de l'Academie Polonaise des Sciences, Serie des Sciences Techniques Vol X, No 11, 1962; pp 461-465.

Abstract [English article; author's summary in Russian, modified]: The article deals with mechanics of granular bodies from the viewpoint of stochastic processes. The solution of the function describing the two-dimensional subsidence trough is derived. The case is analyzed when both the initial condition and the fundamental solution are random functions. Four bibliographic references are listed: two Polish and two French.

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POLAND

ZHONG-HENG Guo, Department of Mechanics of Continuous Media, Institute of Fundamental Technical Problems at the Polish Academy of Sciences (Zaklad Mechaniki Osrodkow Ciaglych, Instytut Podstawowych Problemow Techniki, PAN).

"The Local Derivative of the Tensor Density in a Moving Coordinate System".

Warsaw, Bulletin de l'Academie Polonaise des Sciences, Serie des Sciences Techniques Vol X, No 11, 1962; pp 467-469.

Abstract [English article; author's summary in Russian]: The article derives the formula for the local derivative of an arbitrary tensor density in a moving coordinate system. This derivative characterizes the time rate of change of a quantity under consideration, at a certain point in space. Also the basic properties of the local derivative are discussed.

Two bibliographic references are listed: one Polish (by the same author, in print) and one German.

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POLAND

ZHONG-HENG Guo, Laboratory of Finite-Deformation Theory, Department of Mechanics of Continuous Media at the Institute of Fundamental Technical Problems, Polish Academy of Sciences (Pracownia Teorii Odkształceń Skonczonych, Zakład Mechaniki Ciał Ciągłych, Instytut Podstawowych Problemów Techniki, PAN).

"The Constitutive Derivative of Tensor Fields in Non-Linear Continuum Mechanics".

Warsaw, Bulletin de l'Academie Polonaise des Sciences, Serie des Sciences Techniques Vol X, No 11, 1962; pp 471-477.

Abstract [English article; author's summary in Russian, modified]: The article deals with motion in a continuum and develops a geometrical definition of the constitutive derivative of a tensor field. Such derivative (and all successive derivatives) are defined from the point of view of an observer attached to the moving particle of the continuum. The final expression for the constitutive derivative in a moving coordinate system is given and its five fundamental properties are stated.

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POLAND

Warsaw, Bulletin de l'Academie Polonaise des Sciences, Serie des Sciences Techniques Vol X, No 11, 1962; pp 471-477.

Five bibliographic references are listed: one Polish, one German, one Italian and two American(or British).

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