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ABSTRACTS FROM EAST EUROPEAN
SCIENTIFIC AND TECHNICAL JOURNALS
(Earth Sciences Series)

No. 42

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FOREWORD

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ABSTRACTS FROM EAST EUROPEAN
SCIENTIFIC AND TECHNICAL JOURNALS

- Earth Sciences Series -

No. 42

This report consists of abstracts of articles from the East European scientific and technical journals listed in the table of contents below.

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CZECHOSLOVAKIA

KURFELOVA, Margita [affiliation not given]

"Relations Between the Phenological Phases of Fruit Trees and the Meteorological Factors."

Bratislava, Geograficky Casopis, Vol 14, No 3, 62, pp 161-180

Abstract [Author's English summary modified]: The relations between the onset and duration of the phenological phases of fruit trees (apricot, cherry, and apple) and the meteorological factors (temperature, rainfall) are determined by means of statistical methods of analysis of the multiple correlation and nonlinear regression. The data are applicable to Bratislava.

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CZECHOSLOVAKIA

PANOS, Vladimir; Cabinet of Geomorphology (Kabinet pro geomorfologii) of the CSAV [Czechoslovak Academy of Sciences], Brno

"Fossil Karst Forms in the Eastern Part of the Bohemian Highland."

Bratislava, Geograficky Casopis, Vol 14, No 3, 62, pp 161-204

Abstract [Author's English summary]: In the eastern part of the Bohemian mass there are scattered karst regions of various size, built up of Devonian and pre-Devonian, partly crystalline limestones. The author distinguishes three chief groups of fossil karst forms. The first had been formed under a huge cover of tropical weatherings even at the level of their surface; the second, in the bare rock of the exhumed or partially exhumed limestone massives; the third and youngest belongs to the developed karst hydrography. All three groups have been formed at various levels, determined by the special character of the tectonic movements in the Bohemian mass.

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CZECHOSLOVAKIA

TARABEK, Koloman [affiliation not given]

"The Climatic Conditions of the Agrotechnically Optimum Time for Planting Silage Corn in Slovakia."

Bratislava, Geograficky Casopis, Vol 14, No 3, 62, pp 205-212

Abstract [Author's English summary modified]: Corn has to be sown in soil which, at a depth of 10 cm, has a temperature of at least 8 to 10 degrees centigrade; its vegetative period is limited by the arrival of the first autumn frost. Taking these criteria into consideration, the optimum planting time for corn in Slovakia has been computed and tabulated, on the basis of the meteorological statistics of 22 stations, covering the past 50 years.

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CZECHOSLOVAKIA

KVIETKOVIC, Jozef; and HARMAN, Miroslav; [affiliations not given]

"Some Comments on the Occurrence of Fossilized Crust of Weathering and Its Relation to the Relief in the Foothills of the Vihorlat-Popričný Volcanic Arc."

Bratislava, Geograficky Casopis, Vol 14, No 3, 62, pp 213-228

Abstract [Authors' English summary]: This study deals with the fossilized red crust of weathering which arose on the Panonic pyroxenic andesites and their pyroclastic rocks in the foothills of the Vihorlat-Popričný volcanic arc (Eastern Slovakia). In the morphological sense, the foothills form a pediplain. The crust of weathering is found in residues both in the intervalley backs of the pediplain and between the lava currents of individual flows. It is the product of the siallitic-allitic type of weathering of subtropical climate, and it is formed by minerals from the kaolin and illite group.

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CZECHOSLOVAKIA

HRADILEK, Ludwig; Department of Applied Geophysics at Charles University, Prague [original-language version not given]

"Determination of Elevations, on the Basis of the Electrooptical Measurement of Distances."

Prague, Studia Geophysica et Geodaetica, Vol 6, No 4, 62, pp 317-330

Abstract [German article; Author's English summary, modified]: Report on 1961 triangulation and hypsometric surveys in the Tatra Mountains, purpose of which was: 1. To test author's method of determining elevations with a geodimeter NASKZA, as proposed in his 1958 article (same journal, No 2); 2. To continue research on interrelations between refraction and changes in meteorological conditions; and 3. To clarify assumptions concerning the adjustment of the triangulation network, important from the viewpoint of determining horizontal and vertical displacements of the earth's crust in mountainous regions.

CZECHOSLOVAKIA

TABULEVICH, V.N., and SAVARENSKIJ, B.F.; Institute of the Physics of the Earth, USSR Academy of Sciences (Institut fiziki zemli, Akademii Nauk SSSR), Moscow

"A Contribution to the Correlation of Microseisms, Meteorological Conditions, and Sea Roughness."

Prague, Studia Geophysica et Geodaetica, Vol 6, No 4, 62, pp 331-339

Abstract [English article; Authors' Russian summary, modified]: A method is described of locating the origin of microseisms, using the amplitude ratios of different stations, provided that the microseisms at the stations are synchronous in frequency and changes. A circle is drawn on the basis of the amplitude ratio of each pair of stations; the intersection of the circles is the point where the microseism originates. Application of method illustrated through examples from Caspian Sea and Atlantic Ocean. Good agreement obtained between minimum-pressure isobars and microseism-origin lines.

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CZECHOSLOVAKIA

KARMIK, Vit; Geophysical Institute of the Czechoslovak Academy of Sciences (original-language version not given), Prague

"Amplitude-Distance Curves of Surface Waves at Short Epicentral Distances ($\Delta < 2,000$ km)."

Prague, Studia Geophysica et Geodaetica, Vol 6, No 4, 62, pp 340-346

Abstract [English article; Author's Russian summary, modified]: A comparison of the $B(\Delta)$ amplitude curves and $B/T(\Delta)$ ratios published by various authors shows that the B/T values have less dispersion and, therefore, are more suitable for determining the values of M . The slope of the empirical amplitude-distance curves can be explained as a result of successive overlapping of amplitude curves of different wave types with different periods. The changes in the slope of the maximum amplitude curves between 100 to 200, and 500 to 700 kilometers correspond to a shift of maximum energy from one wave group to another. The comparison permits the improvement of the mean calibrating curves for magnitude determination and classification of earthquakes in the European area.

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CZECHOSLOVAKIA

PROS, Zdenek; VANEK, Jiri; and KLIMA, Karel; Geophysical Institute of the Czechoslovak Academy of Sciences [original-language version not given], Prague

"The Velocity of Elastic Waves in Diabase and Greywacke, under Pressures of Up to Four Kilobars."

Prague, Studia Geophysica et Geodaetica, Vol 6, No 4, 62, pp 347-368

Abstract: [English article; Authors' Russian summary, modified]: A report on laboratory measurements of variation in velocity of longitudinal and shear waves in diabase and greywacke (two typical rocks in Příbram mining region), under hydrostatic pressures of up to 4 kilobars. Purpose: to compile data for practical application of ultrasonic methods for measuring rock pressure in region. Tabulated results compared with those of other authors.

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CZECHOSLOVAKIA

KARREN, N. Vasilescu; Rumanian Academy of Sciences [original-language version not given], Bucharest

"Origin of the Earth's Magnetism."

Prague, Studia Geophysica et Geodaetica, Vol 6, No 4, 62, pp 369-384

Abstract [French article; Author's Russian summary, modified]: Origin of earth's magnetism explained with two hypotheses: 1. Long ago, a magnetic field of external origin traversed the earth, and -- by means of the Foucault currents produced in the core --determined the relative speed between the earth's core and crust. 2. Radioactive atoms in the interior of the earth emit electrically neutral fast protons, and neutralized electrons appear around the emitting atoms. These moving neutral particles comprise the magnetic field.

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CZECHOSLOVAKIA

MRAZEK, Jiri; Geophysical Institute of the Czechoslovak Academy of Sciences [original-language version not given], Prague

"A Contribution to the Problem of the Propagation of Ultralong Electromagnetic Waves in the Magnetosphere."

Prague, Studia Geophysica et Geodaetica, Vol 6, No 4, 62, pp 385-390

Abstract [German article; Author's Russian summary, modified]: The refractive-index formula is examined under the conditions of ultralong-wave propagation in the magnetosphere, disregarding the effects of the ionosphere. Certain conclusions are made, the most important being (2). Attention is called to the importance of function (3), the extreme of which at a certain distance from the earth's surface characterizes the return point of atmospheric whistlers. It is recommended to undertake a synchronized study of atmospheric whistlers, from several stations located on the same meridian, to determine all such return points. It is shown that the propagation path of the waves is nonsymmetrical with the equator. Finally, the geometrical-optical principles are reviewed for determining the propagation path of the waves under the most simple conditions.

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CZECHOSLOVAKIA

TRISKOVA, Ludmila; Institute of Radio Engineering and Electronics, Czechoslovak Academy of Sciences [original-language version not given], Prague

"Ionisation through Earth Satellites."

Prague, Studia Geophysica et Geodaetica, Vol 6, No 4, 62, pp 391-399

Abstract [German article; Author's Russian summary]: Measurements indicate that fields of higher electron concentration form around artificial earth satellites. The analysis of Sputnik signals leads to the conclusion that the ionised field is in front of the satellite. In accordance with the described ionisation mechanism, the electron concentration depends on the cross section of the satellite, its speed, and on the composition of the atmosphere at the given height.

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CZECHOSLOVAKIA

VINEK, Vojtech; Meteorological Laboratory of the Czechoslovak Academy of Sciences [original-language version not given], Prague

"A Contribution to the Formation of Subtropical Anticyclones."

Prague, Studia Geophysica et Geodaetica, Vol 6, No 4, 62, pp 400-406

Abstract [German article; Author's Russian summary]: With the aid of certain simplifications and the so-called pseudogeostrophic approximation it is theoretically proven that the existence of subtropical anticyclones follows from the equation of atmospheric motion, as a hydrodynamic characteristic of the atmospheric process. A continuous high-pressure belt in subtropical regions is dynamically impossible; separate high-pressure centers exist in accordance with the occurrence of oceans and continents. The zonal (meridional) distribution of these centers is closely connected with the zonal (meridional) temperature gradients. In the vicinity of the equator, only cyclonic storms are possible.

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CZECHOSLOVAKIA

BURSA, Milan; Geodetic Research Institute [original-language version not given], Prague

"The Theory of Determining the Dimensions of a Reference Ellipsoid, and the Geodetic Datum, on the Basis of Observations by Artificial Satellites."

Prague, Studia Geophysica et Geodaetica, Vol 6, No 4, 62, pp 407-409

Abstract [Russian article; Author's German summary]: Assuming that at points on the earth's surface it is possible to measure the topocentric equatorial coordinates of an artificial earth satellite, and that for the observation time the geocentric equatorial coordinates of the satellite are known, then the position of the points in relation to the earth's center of gravity can be determined. Starting out from these data, the present work deduces the theory of determining the parameters of a reference ellipsoid, and the geodetic datum.

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CZECHOSLOVAKIA

GUBIN, I. E.; Institute of the Physics of the Earth, USSR Academy of Sciences (Institut fiziki zemli, Akademii Nauk SSSR), Moscow

"Seismicity and Geological Structures of Central Asia."

Prague, Studia Geophysica et Geodaetica, Vol 6, No 4, 62, pp 410-411

Abstract [English article; Author's Russian summary, modified]: A study of 30 earthquakes (with forces of 4 to 7.5 M) occurring in Central Asia in the past 60 years, and of the corresponding geological structures, led to the following conclusions: Geological structures of the same type, with equal dimensions and speed of displacement, had earthquakes of equally high levels of intensity, magnitude, frequency, and depth of foci. Conversely, geological structures of different types and dimensions had earthquakes of unequal levels of intensity, magnitude, etc.

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POLAND

"List of Awards of the Polish Meteorological and Hydrological Society for 1960-1961." [Unsigned article]

Warsaw, Przegląd Geofizyczny, Vol 7(15), No 2, 62, p 138

Abstract: A prize of 6,000 zloty was awarded to docent Kazimierz Chomicz for his works Snow and Avalanches in the Tatra Mountains in 1959; Classification of Snow and Methods of Snow Research in Poland; and Snow and Avalanches in the Tatra Mountains in 1960.

Prizes of 1,500 zlotys each were awarded for the dissertations of the following: Magister Engr Juliusz Roguski, Chair of Hydrology and Water Management, Warsaw Polytechnic (Katedra Hydrologii i Gospodarki Wodnej PW); Magister Janusz Borkowski, and Magister Krystyna Illakowicz, Chair of Atmospheric Physics at Warsaw University (Katedra Fizyki Atmosfery UW); and Magister Barbara Orlicz, Chair of Climatology at Warsaw University (Katedra Klimatologii UW).

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