XXIII. ZBORNÍK DEJÍN FYZIKY
Abstracts

K URČOVÁNÍ DRÁHY SATURNA V GEOCENTRICKÉ A HELIOCENTRICKÉ SOUSTAVĚ

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ABSTRACT

To determination of Saturn´s orbit after geocentric and heliocentric system

Ptolemy showed in Almagest, how to convent specific observational data into numerical parameters of his geocentric planetary model, and with help of model constructed tables planetary positions for any given time, past or future. According to Copernicu´s heliocentric model the planets had to revolve around the Sun. The contribution contains the results of historical reconstruction determination of Saturn´s orbit after Ptolemy´s Almagest and De Revolutionibus of Copernicus. Both books are full of mathematical considerations and arguments.

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ZUSAMMENFASSUNG

Dieser Artikel beschreibt Schicksal von Josef František Smetana, Dichter, ausgezeichnetem Pädagoge und Autor vieler hervorragenden Physik-, Geschichts- und Naturkundelehrbüchern der Wiedergeburt. Das erste tschechische Lehrbuch der Astronomie, in dem er die tschechische astronomische Terminologie einführt, war sein Spitzenwerk.

CHRISTIAN DOPPLER A VÝUKA TEORIE PRAVDĚPODOBNOSTI V ČESKÝCH ZEMÍCH*

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ABSTRACT:

The article deals with a „probabilistic" chapter of a textbook of arithmetic and algebra written by Christian Doppler (1803 – 1853) and published in Prague in 1844 (2nd edition Vienna 1851).

POČÁTKY STUDIA ELEKTROMAGNETICKÝCH JEVŮ VZNIK AMPÈROVY ELEKTRODYNAMIKY

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ABSTRACT

The beginnings of studies of electromagnetic phenomena – The creation of Ampère's electrodynamic

The first chapter of this article is dealing with a brief description of studies of electric and magnetic phenomena until Oersted's discovery of magnetic influence of electric currents (1820). The second chapter is devoted to Oersted's basic discovery. At first the reader can learn more about the life and work of a significant Danish physicist Hans Christian Oersted (1777 – 1851). Then we learn more about his famous experiment and about mathematic definition of dependence of physic elements expressed in Biot – Savart – Laplace law.

The third chapter is dealing with the life and work of André Maria Ampère (1775 – 1836) who is considered as a founder of electrodynamic and who was called as „Newton of electricity" (by J. C. Maxwell). The last chapter (the 4th) is devoted to basic experiments and following relations of Ampère's electrodynamic. This work is placed (by the time and by the facts) between the work of Coulomb and Maxwell and it is considered as one of the best events in theory dealing with electricity and magnetism.

SNAHY O APLIKÁCIU ELEKTROMAGNETICKÝCH JAVOV V DIELE ŠTEFANA ANIÁNA JEDLIKA

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ABSTRACT

Efforts of application electromagnetic phenomenon's in the work of S.A. Jedlik

Benedictinus S.A. Jedlik, worked for many years as a professor of physics at Budapest University and is known as one of the most significant physicist in Hungary during 19 th Century. He attended to various parts of Physics, but he was focused to theory and experiments in the field of electricity, magnetism and electrotechnics, where he gained the most important successes. Jedlik enthusiastically spectated the world's most famous pioneers' researches in the mentioned fields and finally became one of them as well. Between the years 1827 and 1829 he constructed first model of electromotor, which was the first and one of kind, in which rotor and stator were acting roles of electromagnets. His other invention „unipolar inductor" was unique too. By using this machine he invented and applied dynamo electrical principle 5 yeas before Werner Siemens and others.

OD UHLÍKOVÉ ŽÁROVKY K MODERNÍM ZDROJŮM SVĚTLA

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ZUSAMMENFASSUNG

Die Entwickelung der elektrischen Beleuchtung ist ein Nachweis der geistigen Potenz von vielen mehr- und minderbekannten Erfinder die physikalische Erkenntnise anwenden, die notwendige Technologien bemeistern und für jeden verfügbare Lichtquellen schaffen. Der Artikel zeigt die Entwickelung der Glühbirnen, der Fluoreszenz- und Entladungslampen.

ZLATO A STRIEBRO V HISTORICKO–FYZIKÁLNEJ DIZERTÁCII O UHORSKÝCH BANIACH Z ROKU 1714

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ABSTRACT

Author deals with one of dissertations published in Trnava University printing house in 1714, shortly afterwards the consolidation process in Hungarian society began, one of the few preserved up to now. Dissertation on History and Physics of Mines in Hungary, divided into sixteen chapters devoted to each individual metal and other minerals quarried in Hungarian Kingdom is presented via author's closer view into problems of two most significant ones, gold and silver. Through analysis of text and quoting of anonymous author of the dissertation the then scientific approach towards concerned questions is presented, revealing Aristotelian essence of science as it was maintained at Jesuit universities of the era.

GALILEO GALILEI A LEGENDA ŠIKMEJ VEŽE

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ABSTRACT:

Galileo Galilei and the legend of the leaning tower

It was the famed physicist Galilei whose study of gravity spawned the legendary tale of the Leaning Tower of Pisa "feather drop." As the story goes, Galilei held a feather and a stone in either hand and released them simultaneously. Because the feather's structure slowed its descent in parachute fashion, the stone reached Earth first. Had both been released above the place where no air exists, at Moon's surface each would have struck lunar firmament simultaneously. It was not until Astronauts David Scott and Jim Irwin conducted Galilei's experiment on the Moon during their Apollo 15 mission that the experiment could be duplicated in the lunar environment,. On web pages you can see and hear Astronaut David Scott perform Galilei's experiment on the Moon in Apollo 15. Galilei's hypothesis had been that all objects fall with the same velocity in the absence of air resistance.

JOHANNES KEPLER – PRESVEDČENÝ O HARMÓNII SVETA

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UHORSKÝ HIPPOKRATES OTTO KAROL MOLLER

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ABSTRACT

He was a physician, a pioneer of public health in Slovakia in the beginning of the 18th century. After finishing the study of medicine he worked as a practical physician in Bratislava, in years 1703 – 1705 he was the leading physician of Franz the 2nd. Rákóczi´s court. He was generally interested in development of medical as well as natural sciences, particularly in chemistry. In the year 1713 he grounded a private medical school in Banská Bystrica, which was supposed to prepare medical students for study at medical faculties abroad. At Moller´s school, practical as well as theoretical lessons of medicine and surgery were lead, and it was equipped by a laboratory. He was an excellent practical physician, but he also supported the development of mining. He was very helpful during the epidemic of pest in 1709 and in this year he published the letter „Consilium medicum de curada peste cum praeservatinibus". In the year 1726 he wrote „Cucinta morbos curandi methods" for his students and in the year 1739 he worte the work about prevention of pest infection „ Consilium medicum, wie mann sich vor der Pest und ansteckekenden Krankhaiten und Seuchen durch gottlichen Beystand praeserviren". The emperor Charles the 6th promoted him for his rich scientific and cultural work to an aristocrat.

ERNEST FLORENS FRIDRICH CHLADNÝ – CHLADNI
Fyzik so slovenskými koreňmi, nazývaný otec akustiky a meteoritiky

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ABSTRACT

Ernst Florens Friedrich Chladny (Chladni) - physicist, whose ancestors had Slovak origin.

The aim of this lecture is to commemorate the life and work of E.F.F. Chladny (1756-1827) , German physicist, whose ancestors had Slovak origin. Chladny as a researcher in the field of natural science thanks to his discoveries he deserves the title :"Father of acoustics and meteoritics".One of Moons crater bears his name.

CHLADNIHO OBRAZCE V ANTOLIKOVOM PODANÍ

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ABSTRACT

Chladni patterns in Antolik's acoustic experiments

Karl Antolik was scientifically active high school professor, who attended to various parts of Physics during his life. He became famous mostly for his researches with electric sparks, which became basics

of E. Mach's researches of detonation waves. Antolik was interested in acoustics as well. Thanks to his perfect aptitude for physical experiment he developed a method, by which he examined membran's and tense web's vibration using Chladni patterns. This article is dedicated to this field of Antolik's work.

PROF. RNDR. JÁN FISCHER – FYZIK A PEDAGÓG

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NADMOŘSKÉ VÝŠKY A VÝŠKOVÉ SYSTÉMY VE FYZIKÁLNÍM PROSTORU ZEMĚ

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ABSTRAKT
Přehled vývoje teorií výšek a technik určování převýšení a nadmořských výšek na povrchu Země a v okolozemském prostoru ve fyzikálním prostředí za působení gravitačního pole Země, vytváření lokálních, národních a kontinentálních výškových systémů. Nástup družicové geodézie, podmínky pro zahájení výzkumů a vzniku globálního systému nadmořských výšek, současný stav a příspěvek Geografické služby AČR.