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Review Article

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Consequences of Maneff's theory

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Introduction

Theory created by Bulgarian Professor Georgi Maneff is not popular. There are several reasons about that. First, G. Maneff worked at the Sofia University between First and Second World War. It was a time for revolution in society and science. Second, Maneff theory has forbidden for political reasons during the second half of 20 centuries.

We found Maneff's theory mentioned in a university textbook of Celestial Mechanics for the first time [1]. Several authors used Maneff's theory for practical applications [2-9]. Memorial symposium has organized in Bulgaria [10]. Some historical investigations have made during the same time [11-17]. There are two kinds of his name: Maneff or Manev before or after World War II.

The aim of this article is to show effects of Maneff's theory. This subject has presented on the Fifth International Conference on Theoretical and Applied Physics in Vienna, Austria 2-3 July 2018 [18].

History of Sofia University Theoretical Physics Department

Faculty of physics and mathematics at the Sofia University has 132 years' history from 1889 up to now. High School in Sofia later on University had eight-term studies, two university exams, five mathematical departments, five experimental physics departments and one theoretical physics department during the first half of 20 centuries.

Sofia University

1888 – 1904 High School in Sofia
1904 Sofia University
1889 Faculty of Physics and Mathematics
8 Terms Study
2 University Exams
1928 PhD Students
1963 Faculty of Physics

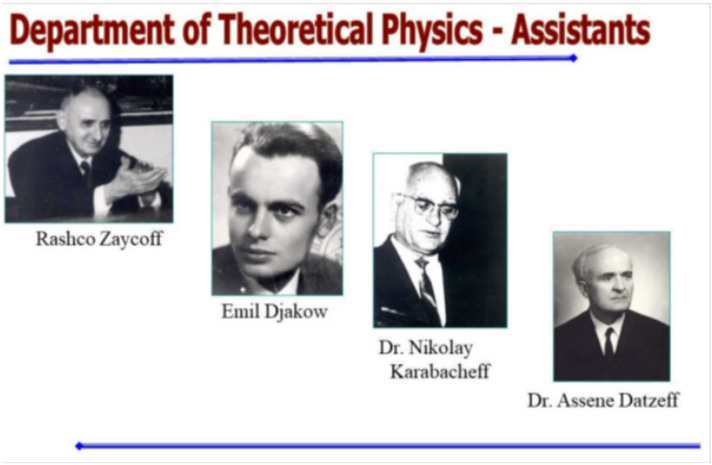
Experimental Physics Departments	Mathematical Departments
1889 Experimental Physics	1889 High Algebra
1892 Astronomy	1889 High Analysis
1919 Radioactivity (Nuclear Physics)	1890 Differential and Integral Calculus
1920 Meteorology	1891 Analytical Geometry
1926 Technical Physics	1891 Analytical Mechanics

1921 Theoretical Physics Department

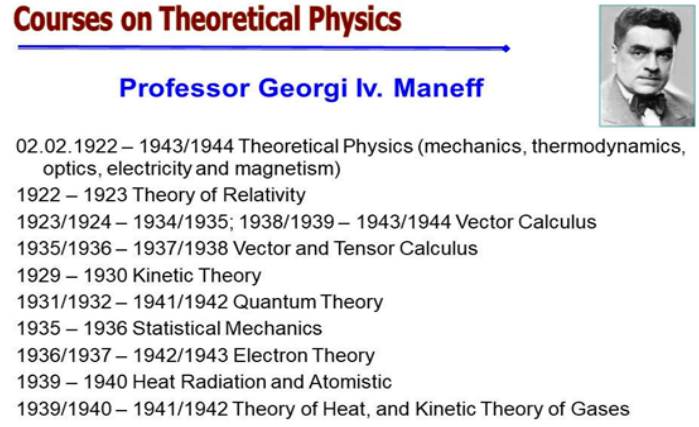
Bulgarian Government legalized 36 Ph.D. diplomas in physics up to 1950. Eleven dissertations had theoretical proves. German universities trained eleven Bulgarian physicists. Six of them graduated Ph.D. in physics. French universities trained theoretically nine Bulgarian physicists. Three of them graduated doctoral degree in physics. Sofia University educated ten Ph.D. students in physics. Four of them became doctor of physics. Two of dissertations were prepared theoretically. Bulgarian Ph.D. education in physics has less number and effectiveness then Ph.D. education in mathematics, chemistry or geology. Sofia University Ph.D. students worked

11 university terms in physics, 7 terms in chemistry and geology, and 5 terms in mathematics.

Sofia University sent its assistants to specialize abroad caring of their travel expenses only. Bulgarian physicists and mathematicians made theoretical specialization in physics abroad. They studied postgraduate, PhD, and postdoctoral programs in the area of theoretical physics, astronomy, analytical mechanics, physical chemistry, and meteorology during the first half of 20 centuries. They studied analytical mechanics in France and Germany, astronomy in universities of Paris, Potsdam, Leipzig, Munich, Gottingen, Berlin and Sofia, physical chemistry in Berlin and Breslau, meteorology in Berlin. Five Bulgarian university assistant in physics studied theoretical physics abroad (N. Stoyanov, G. Maneff, R. Zaycoff, A. Datzeff. Ch. Christov). One of them graduated Ph.D. (A. Datzeff).



Sofia University Theoretical physics department has a great importance in Bulgarian university education on physics. Physics and mathematics had common syllabus for 30 years (1889-1921). Separation between physics and mathematics happened with Professor Georgi Maneff participation. Process was difficulty for him because there has concurrent group of mathematicians. In that reason, he produced scientific results with global significance.



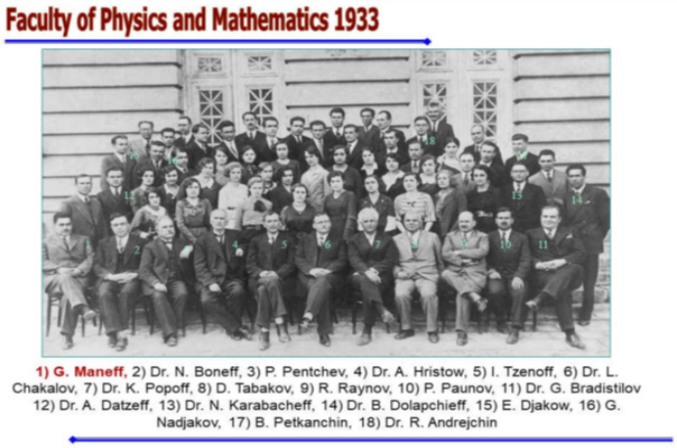
Georgi Ivanoff Maneff (1884–1965) built theoretical physics department. He initiated many courses and theoretical physics seminar. Professor Maneff was Faculty dean, University Rector, and Minister of Education. Victimized from the University after the World War Second, he did not return there up to the end of his life.

"Reaction" theory

Georgi Maneff initiated translation motion together with rotation. His new idea has great importance [19]. He called it "reaction" theory [20]. More than 30 articles described his theory in French, German, English, and Bulgarian, magazines (1924–1935) [21-24]. He is accepting that bodies in the Universe have uninterrupted motion with rotation and translation of the center of rotation. His theory provided the same good theoretical approximation as general relativity. He used method of vector calculus to solve problems.

Georgi Maneff introduced his *"substantial dynamic theory" by words "reaction theory, we will allow to give this name to it … Mathematical problem of our theory is the same as the problem of relativity [23]. When two systems in motion are equivalent kinematically, they are not equivalent in dynamical and physical attitude. We accept spherical symmetry of the Universe. Gravitation in our theory is a force and an independent gravitation field. The rotation is very important, when we investigate the movement in gravitational field"* [24].

"Our presentation is different from relativity in its initial principles and terms. Our method is different. Einstein's solution is a special case of our substantial solution" [23].



There are some positive reviews about Maneff's theory. **N. Obreshkoff** writes, "*Maneff obtained that all bodies move uniformly with one and the same velocity… accepts that the mass depends on direction*" [25, s. 20-21]. "*About Mercury, approximate relation given by him is correct strictly about circular motion" [25, s. 23-24]*. **Ivan Tzenoff** *writes, "He solves simultaneously two effects – displacement of perihelion and spectral lines*" [25, s.87]. "*Law of mass is correct but in case when the center of the Sun moves*" [25, s. 84]. **Dr. Kyrille Popoff** writes, "*Some results are a hit in the heart of relativity* [25, s. 13]. *Its results will be true only if we accept velocity of light for unit*" [25, s. 13].

Consequences

Maneff's theory explains Johannes Kepler law of planetary motion. Visible motion is an ellipse because for one Earth year the Sun moves from one focus of the ellipse to another. Sea tides are result of translation motion of the Earth and changes in position of water surface compared to direction of Earth motion for twenty-four hours' period.

Atmospheric pressure has many changes during 24 hours' period.

Its minimum (16:00) and maximum (4:00) depend from direction of our position and direction of Earth movement. All plants, flowers and trees leave because water is moving from roots up to their top one time every day when their position on the Earth surface become opposite to direction of Earth movement. Cultivated plants have 4 months to grow up from seeds to maturity, and trees have 4 years [20-25].

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