Quaternions in Polish publications and lectures courses until 1914

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In the talk I will present the history of the introduction of quaternions: from an introduction result by Leonhard Euler, through those unpublished by Carl Friedrich Gauss, up to the formal definition given in 1843 in Dublin by William Rowan Hamilton.

The main goal of the lecture is an outline of quaternions early reception in Poland. The work is based on the archival records related to the teaching activities of two private docents of the Lwów University: Władysław Kretkowski (1840–1910) and Wacław Sierpiński (1882–1969). Forty years after Hamilton's definition Kretkowski gave a lecture entitled *Krótki wykład teoryi czwórków z zastosowaniam* [A short lecture on the theory of quaternions with its applications]. It happened in Lwów during the academic year 1882/1883. I found his handwritten notes in his *Nachlass* deposited in Kraków. The notes are a unique testimony of the very early reception of quaternions in Poland. More than thirty years after Kretkowski's lecture, the topic was taken up by Sierpiński when his "university lecture course" *The Arithmetic Theory of Quaternions* was published by the Mathematical and Physical Circle (Lwów 1909). This small lithography printed booklet attracts mathematicians and historians of mathematics, and is still incorrectly presented as the first Polish lecture on quaternions. I will show this two examples of different approaches to the theory and applications of quaternions. In my lecture I will also speak about a book by Karol Hertz *Pierwsze zasady kwaternionów Hamiltona. Algiebra kwaternionów, linia prosta i płaszczyzna, powierzchnie i linie drugiego rzędu* [Hamilton's First Principles of Quaternions. Algebra of quaternions, line and plane, surfaces and lines of the second order] (Warszawa 1887).