

The papers in this book chronicle Henri Poincaré's journey in algebraic topology between 1892 and 1904, from his discovery of the fundamental group to his formulation of the Poincaré conjecture. For the first time in English translation, one can follow every step (and occasional stumble) along the way, with the help of translator John Stillwell's introduction and editorial comments.

Now that the Poincaré conjecture has finally been proved, by Grigory Perelman, it seems timely to collect the papers that form the background to this famous conjecture. Poincaré's papers are in fact the first draft of algebraic topology, introducing its main subject matter (manifolds) and basic concepts (homotopy and homology). All mathematicians interested in topology and its history will enjoy this book.

These famous papers, with their characteristic mixture of deep insight and inevitable confusion, are here presented complete and in English for the first time, with a commentary by their translator, John Stillwell, that guides the reader into the heart of the subject. One of the finest works of one of the great mathematicians is now available anew for students and experts alike.

—Jeremy Gray

The AMS and John Stillwell have made an important contribution to the mathematics literature in this translation of Poincaré. For many of us, these great papers on the foundations of topology are given greater clarity in English. Moreover, reading Poincaré here illustrates the ultimate in research by successive approximations (akin to my own way of mathematical thinking).

—Stephen Smale

I am a proud owner of the original complete works in green leather in French bought for a princely sum in Paris around 1975. I have read in them extensively, and often during topology lectures I refer to parts of these works. I am happy that there is now the option for my students to read them in English.

—Dennis Sullivan

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