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The Catenary on a Cone in Peirce's Analytic Mechanics

B. Peirce's 1855 treatise, A System of Analytic Mechanics, has been described as the most advanced mechanics text in English before Wittaker's Analytical Dynamics in 1904. In his text, Peirce aimed to summarize and streamline known European results and also to add some original work. Among other things, the text includes an expanded discussion of Peirce's results from an earlier paper investigating a catenary on a cone of revolution. Peirce claims as a major innovation his consideration of the "infinite part" of the catenary. Because Peirce's frequent publications seldom included actual mathematics, the overlap of mathematical exposition in both the article and the Analytic Mechanics provides a rare opportunity to analyze his assertion of novelty. This talk will consider Peirce's approach to the problem of the catenary on a cone of revolution and investigate both his techniques and related claims of innovation.