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Abstract for an Invited Paper for the APR13 Meeting of the American Physical Society

How History Helped Einstein in Special Relativity

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I will discuss how the German intellectual movement known as "critical history" motivated several physicists in the late 1900s to radically analyze the fundamental principles of mechanics, leading eventually to Einstein's special theory of relativity. Eugen Karl Dühring, Johann Bernhard Stallo, Ludwig Lange, and Ernst Mach wrote critical histories of mechanics, some of which emphasized notions of relativity and observation, in opposition to old metaphysical concepts that seemed to infect the foundations of physics. This strand of critical history included the "genetic method" of analyzing how concepts develop over time, in our minds, by way of ordinary experiences, which by 1904 was young Albert Einstein's favorite approach for examining fundamental notions. Thus I will discuss how history contributed in Einstein's path to relativity, as well as comment more generally on Einstein's views on history.