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Another connection of Boscovich to Einstein pre-1905

Roger J Anderton
R.J.Anderton@btinternet.com

Einstein was aware of Boscovich's theory pre-1905 when he wrote his famous physics papers. Unfortunately, it is unclear in how much detail he knew of it.

This is follow-on from similar article that Einstein knew about Boscovich pre-1905, but now giving another source.

Arthur Miller [1] notes that Einstein had read Boltzmann's "Lectures on Mechanics (1897)" and "Lectures on Maxwell's theory (1891)", ideally from these Einstein should have become aware of Boscovich's theory, however I checked them and there is no mention of Boscovich.

Boltzmann had rejected Boscovich's theory, anyway. [2] Various people have a problem accepting the concept of a point-particle a la Boscovich's theory and often react strongly against the idea; obviously from my point-of-view those people are wrong, because dealing with mathematics especially of geometry a point-particle is an essential part of the construction of our description of physical reality.

Other books that Miller notes as having been read by Einstein pre-1905 also suffer from them not mentioning Boscovich.

Interestingly, the book "Electric waves being researches on the propagation of electric action with finite velocity through space" by Dr Heinrich Hertz, 1862 does mention Boscovich in the foreword of the English translation, but there is nothing in the original German version of the book that Einstein read.

In the preface (p.xi) Lord Kelvin says: "Very soon after the middle of the eighteenth century Father Boscovich gave his brilliant doctrine (if infinitely improbable theory) that elastic rigidity of solids, the elasticity of compressible

liquids and gases, the attractions of chemical affinity and cohesion, the forces of electricity and magnetism in short, all the properties of matter except heat, which he attributed to a sulphureous essence, are to be explained by mutual attractions and repulsions, varying solely with distances, between mathematical points endowed also, each of them, with inertia."

"Before the end of the eighteenth century the idea of action-at-a-distance through absolute vacuum had become so firmly established, and Boscovich's theory so unqualifiedly accepted as a reality, that the idea of gravitational force or electric force or magnetic force being propagated through and by a medium, seemed as wild to the naturalists and mathematicians of one hundred years ago as action-at-a-distance had seemed to Newton and his contemporaries one hundred years earlier. But a retrogression from the eighteenth century school of science set in early in the nineteenth century."

It seems to be the German physics books that Einstein was reading pre-1905 were not giving credit to the sources of much of what they were saying; while Lord Kelvin decides to give the historical setting.

Anyway, the book "Versuch einer Theorie der elektrischen und optischen Ercheinungen in bewegten Korpern" by Lorentz 1895 (translated: "Attempt of a theory of the electrical and optical phenomena in moving bodies") and read by Einstein does mention Boscovich.

It says on p.89: "Uebrigens liegt in unserem Satze auch die Erklarung dafur, dass sich bei der Beobachtung mit Linsensystemen immer die durch die soeben erwahnte Regel bestimmte Aberration herausstellt, ebenso die Erklarung fur deb bekannten Arago'schen Versuch mit einem Prisma, und fur das von Boscovich vorgeschlagene und von Airy ausgefuhrte Experiment, bei welchem der Tubus eines Fernrohrs mit Wasser gefullt war."

Translation: "Incidentally, our statement also states that the observation with lens systems always reveals the aberration determined by the rule just mentioned, as well as the explanation for the well-known Arago experiment with a prism, and for that suggested by Boscovich and Airy's experiment, in which the tube of a telescope was filled with water."

It is not very much, and does not give adequate information to Boscovich's theory, but it does link Einstein as having read it pre-1905.

References

[1] Albert Einstein's Special theory of relativity emergence (1905) and early interpretation (1905-1911), Arthur I. Miller, 1981, ISBN 0-201-04680-6 p 127

[2] Ludwig Boltzmann: The Man Who Trusted Atoms, Carlo Cercignani, 2006 ISBN-978-0-19-857064-6

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