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ON THE PRESENT STATUS OF THE RADIATION PROBLEM
by W. Ritz and A. Einstein

To clarify the differences of opinion that came to light in our respective publications[1], we note the following.

In the special cases in which an electromagnetic process *remains restricted to a finite space*, the process can be represented in the form

$$f = f_1 = \frac{1}{4\pi} \int \frac{\varphi\left[x', y', z', t - \frac{r}{c}\right]}{r}\, dx'\, dy'\, dz'$$

as well as in the form

$$f = f_2 = \frac{1}{4\pi} \int \frac{\varphi\left[x', y', z', t + \frac{r}{c}\right]}{r}\, dx'\, dy'\, dz'$$

and in other forms.

While Einstein believes that one could restrict oneself to this case without *substantially* limiting the generality of the consideration, Ritz considers this restriction not to be permissible in *principle*. If one takes this standpoint, then experience compels one to consider the representation by means of retarded potentials as the only one possible, if one is inclined to the view that the fact of irreversibility of radiation processes must already find its expression in the fundamental equations. Ritz considers the restriction to the form of retarded potentials as one of the roots of the second law, while Einstein believes that irreversibility is exclusively due to reasons of probability.

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[1]W. Ritz, *Phys. Zeit.* 9 (1908): 903-907,   and A. Einstein, *Phys. Zeit.* 10 (1909): 185-193.