is possible for $(k_0,a)\epsilon X$ (III.4) as is easily seen (and $n^2 \rightarrow \infty$ could only be possible for $j \rightarrow \infty$). We suppose that those (k_0,a), for which (3.15) is fulfilled are also in $X' \subset X$ (III.2). The set X' of course depends on e and β; $X'(e,\beta)$, and we could hope that only those (k_0,a) fulfilling (15) and corresponding to rest states are in the set $X'(e\beta)$.

(5) The (4+1) de Sitter group is the group of motion in the de Sitter spherical world[21] with finite extension in space-like and infinite extension in time-like directions. Its curvature tensor is

$$R_{\mu\nu\lambda\rho} = -\lambda^2(g_{\mu\lambda}g_{\nu\rho} - g_{\mu\rho}g_{\nu\lambda}) \tag{3.16}$$

and Einstein's law reads

$$G_{\nu\lambda} = 3\lambda^2 g_{\nu\lambda}, \tag{3.17}$$

where λ is the parameter introduced in (3.3). The radius of the de Sitter world is[21] $R=1/\lambda$, and if we use for λ the empirical value (1.1a) converting MeV into cm^{-1} we obtain for our de Sitter world a radius of $R \approx 10^{-13}$ cm.[22] Thus we can consider a strongly interacting particle as a de Sitter "spherical" world of 10^{-13} cm with finite space-like and infinite time-like extension,[23] a picture which is not too far from our usual image of a particle, which might indicate that our model is not too far from reality.[24]

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[21] A. S. Eddington, *The Mathematical Theory of Relativity* (Cambridge University Press, New York, 1963), 10th ed., Chap. V

[22] A geometrical interpretation of the contraction process is difficult, as it does not simply mean $R \rightarrow \infty$ but $\alpha/R \rightarrow m_0$.

[23] If we had chosen the (3+2) de Sitter group [J. B. Ehrman, Proc. Cambridge Phil. Soc. **53**, 290 (1957)] instead of the (4+1), the strongly interacting particle would have been infinite in space but finite in time, in disagreement with our ideas of a particle, but then we would also have obtained $m^2 = \lambda^2\alpha^2 - \lambda^2 j(j+1)$ instead of (3.12), which is in obvious disagreement with experimental facts. It should be remarked that the use of the 3+2 deSitter group in the large [see, e.g., C. Fronsdal, Rev. Mod. Phys. **37**, 221 (1965)] is a completely different idea from the present one. There a single mass point is embedded in a large curved universe and has a discrete spectrum which in the limit $R \rightarrow \infty$ goes over into the continuum states of the mass point in flat space; it is a change of the kinematical group and has nothing to do with dynamics.

[24] For a discussion and interpretation of de Sitter rotator in which the compact subgroup R_4 is diagonalized see A. O. Barut, in Seminar on High Energy Physics and Elementary Particles, Trieste, 1965 (unpublished).

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