Did Minkowski Change his Mind about Noneuclidean Symmetry in Special Relativity? FELIX T. SMITH, SRI International — Minkowski (M.) observed in 1907 that the symmetry of relativistic velocity space is the same as that of noneuclidean geometry. He withheld this text from publication, but Sommerfeld published it 6 years after he died, Ann. Phys. (4) **47**, 927 (1915), [1]. Six weeks later in a long, careful article, Gött. Nach. (1908) 53, [2], M. made only a much weaker statement about the noneuclidean parallel. In [3], Phys. Zeitschr. **10**, 104 (1909), he avoided the issue entirely. M's reasons for the changes have never been known. I now show that a key equation in [1] had an error in sign, undetected by Sommerfeld or other commentators, which M. evidently soon saw. This error had led to omitting the factor $\beta = \left(1 - v^2/c^2\right)^{-1/2}$ in the relativistic velocity $\mathbf{u} = \mathbf{p}/m_0 = \beta\mathbf{v} = \beta\dot{\mathbf{x}}$. With the error corrected, it became clear that while velocity is constrained to a negative-curvature 3-space, space-time is a flat 4-space. The changes between [1], [2] and [3] will be discussed in the light of M's evolving understanding, his different intended audiences, and the possibility that he chose to defer the noneuclidean aspects of velocity and of space-time for later treatment.

Felix T. Smith
SRI International

Date submitted: 23 Oct 2009

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