

PART I: THE EARLY HISTORY THROUGH 1975

A. INTRODUCTION

Several previous papers¹⁻⁵ have given the history of the discovery of the τ lepton at the Stanford Linear Accelerator Center (SLAC). These papers emphasized (a) the experiments which led to our 1975 publication of the first evidence for the existence of the τ , (b) the subsequent experiments which confirmed the existence of the τ , and (c) the experiments which elucidated the major properties of the τ . That history will be summarized in Part 2 of this talk.

In this Part 1, I describe the earlier thoughts and work of myself and my colleagues at SLAC in the 1960's and early 1970's which led to the discovery. I also describe the theoretical and experimental events in particle physics in the 1960's in which our work was immersed. I will also try to describe for the younger generations of particle physicists, the atmosphere in the 1960's. That was before the elucidation of the quark model of hadrons, before the development of the concept of particle generations. The experimental paths to progress were not as clear as they are today and we had to cast a wide experimental net.

B. SLAC, LEPTONS, AND HEAVY LEPTONS

At the start of the 1960's, I was at the University of Michigan; our experiments were carried out at the Brookhaven Cosmotron and the Berkeley Bevatron, experiments in strong interaction physics. But I was becoming interested in lepton physics for a number of reasons. I liked experiments in which the results could be summarized in a few numbers or a few graphs. Thus I worked primarily in elastic scattering and other two-body reactions. I also liked experiments where the theory was relatively simple, and it was clear that strong interaction theory was not becoming simpler. On the other hand, the physics of leptons seemed a simpler world.

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