

Guido Beck, Alexandre Proca, and the Oporto Theoretical Physics Seminar

Augusto José dos Santos Fitas and António Augusto Passos Videira*

We describe the pioneering attempts made by Ruy Luís Gomes (1905–1984) and other Portuguese physicists to develop a research and teaching seminar in theoretical physics at the University of Oporto in 1942–1944 under the leadership first of the refugee Austrian theoretical physicist Guido Beck (1903–1988) and then of the Romanian-French theoretical physicist Alexandre Proca (1896–1955). These efforts failed, however, owing to lack of sustained financial support from the Portuguese government and to the political repression of the Salazar regime, which dismissed Gomes and other prominent Portuguese physicists and other scientists from their university positions.

Key words: Guido Beck; Alexandre Proca; Ruy Luís Gomes; Manuel Valadares; José Luís Rodrigues Martins; Fernandes de Sá; University of Coimbra; University of Oporto; University of Lisbon; Portuguese physics; Salazar regime; refugee physicists; theoretical physics.

Introduction

Prior to the arrival of the refugee Austrian theoretical physicist Guido Beck (1903–1988) and the Romanian-French theoretical physicist Alexandre Proca (1896–1955) in Portugal in 1941 and 1943, respectively, no courses or seminars in theoretical physics had been taught in the Faculties of Science of any Portuguese universities, among other reasons because none offered a degree in physics, although degrees were offered in mathematics and jointly in physics and chemistry. A course on relativity had been taught in the early 1920s as part of the course work for a degree in mathematics, and in the 1930s for a degree in physics and chemistry, but the study of quantum physics, nuclear physics, and other areas of physics of increasing importance played only marginal roles in these curricula. The few references to theoretical physics occurred only when individual professors lectured to audiences, mainly student audiences, on some of the new developments that were taking place in science.

Thus, on the eve of the Second World War, some activity in Portugal in disseminating information about the many new developments and discoveries taking place in

* Augusto José dos Santos Fitas is an Associate Professor of Physics and a member of the History and Philosophy of Science Study Center at the University of Évora, Portugal. António Augusto Passos Videira is an Associate Professor of Philosophy and a member of the Philosophy of Nature Research Group at the Rio de Janeiro State University, Brazil.



Fig 1. Guido Beck (1903–1988). *Credit:* American Institute of Physics Emilio Segrè Visual Archives, Physics Today Collection.

physics can be discerned, but almost no research was being carried out, except at the University of Lisbon by the experimental physicists Manuel Valadares (1904–1982) and Aurélio Marques da Silva (1905–1965). Both had worked with Marie Curie (1867–1934) in her *Institut du Radium* in Paris and had received Ph.D. degrees from the University of Paris, Valadares under Curie in 1933 and Marques da Silva under Frédéric Joliot (1900–1958) in 1938. Although both experimental physicists worked tirelessly in the Laboratory of Physics at Lisbon, the general outlook for the development of theoretical physics in Portugal was very poor, and as we shall see, the efforts of Beck and Proca to improve it were ultimately unsuccessful.

Beck

Guido Beck (figure 1) was born on August 29, 1903, in Reichenberg, Bohemia, a small town in the Austro-Hungarian Empire.¹ His father moved the family first to Zurich, Switzerland, in 1908, where he was the director of an English firm, and then to Vienna, Austria, in 1920, where his son received his Ph.D. degree under Hans Thirring (1888–1976) at the University of Vienna in 1925 with a thesis on a topic in the theory