

Remarks on the Physicist Burkhard Heim

The physicist Burkhard Heim (Febr.9,1925 - Jan.14, 2001) is today mostly unknown amongst physicists. In the 1950s on the other hand, Heim became an international celebrity, when at an international congress on space flight he discussed the theoretical possibility of “field propulsions“ for space vehicles for the first time.

In 1944 Heim lost both hands, his eyesight and his sense of hearing in an explosion accident. With the help of his father, Burkhard Heim studied in Goettingen and got his diploma-degree (M.Sc.) in physics. For several months in 1952 he was employed at the *Max-Planck-Institute for Astrophysics* in Goettingen, where the famous physicist C. F. von Weizsaecker had called him. Very soon it was found that it was impossible for him to work within a team, because of his handicap, and he left the MPI and after that continued to work alone and privately on a unified theory of matter and gravitation. In the year of Einstein’s death (1955) Heim informed Einstein on his work on a unified field theory. (Regrettably, only the mathematician W. Hlávaty could answer his letter.)

In close collaboration with the relativity theorist Pascual Jordan, Heim wanted to carry out experiments on gravitation, but success eluded him, as the necessary budget was not available. Instead, L. Boelkow, director of the leading aero-space company in Germany, *MBB/DASA*, gave some financial support, since he was interested in the field propulsion system which Heim had proposed. (In a letter to Heim, Wernher von Braun enquired about progress in the development of such a field propulsion system since otherwise he could not accept responsibility for the enormous cost of the moon-landing project. Heim answered in the negative.)

The scientific community awaited publications by B. Heim. However, financially Heim was absolutely independent. He was not pressed to publish papers or to give lectures at congresses in the physical field. Also, Heim declared to colleagues that he would publish only if he could present a confirmation for the correctness of his theory. Therefore Heim became more and more unknown to the new generation of physicists.

Already in the seventies Heim reached his goal, i.e., a confirmation of his structure theory (a quantum-geometric 6-dimensional polymetric unified field theory, with which the internal structure of elementary particles could be understood purely geometrically) by comparison with experimental particle data. Now Heim wanted to publish, but he no longer had the necessary lobby. The director of the *MPI for Elementary Particles* in Munich, H. P. Duerr (who succeeded to the chair of W. Heisenberg) proposed to Heim to write an overview of his theory in the *MPI* publication organ “*Z. f. Naturforschung*,” which Heim did ([32a](#), 1977). Since the readers’ resonance to it was great, and many desired to read in greater detail about this theory, Heim began to publish his theory in two books (“*Elementarstrukturen der Materie und Gravitation*,” Innsbruck: Resch; 1984, 1989), with a total of 694 pages.

The reception of the results of his investigations was extremely hesitant from the beginning, since Heim was not as a member of an institute or a university or involved in a group of known scientists, and therefore he lacked advocates in the scientific community. In the beginning famous German physicists accused Heim of pursuing a “space flight fantasy,” which was despised by theoretical physicists at that time.

Further reasons can be found for the lack of reception:

1. Scientists are not inclined to study about 700 pages of very difficult content by an author who is not yet known. Instead, such readers await judgement on the books by a respected authority. Therefore, unfortunately the head of DESY was silent, when Heim's mass formula had been programmed and calculated there, in 1982. Although the results were assessed as outstanding (by the DESY co-workers Schmid and Ribgen), it was thought desirable to wait for an assessment by structure theorists.
2. After his manuscript had experienced a more than one year delay with a renowned German publishing company, Heim eventually published his books in a publishing house that was not specialised in mathematics and physics.
3. Heim's books contain some vagueness - beside the correct results - what is not astonishing for such a difficult matter, which was worked on by only one author, without the help of academically trained colleagues in a team and without checks from outside. Thus it becomes more difficult to understand for the reader.
4. The text did not appear simultaneously in German and English, so that international physicists, who perhaps could invest more time and effort, were excluded as possible readers.

When, however, the importance of the work will be measured by the results, it follows that the principles and the theory structure on which the theory based are far-reaching and therefore should be kept in mind in future works! This theory should be noticed by the scientific community, since it yields testable results, corresponding to empirical data in all regions, which no other physical theory can supply.

Heim's theory, which yields in a totally geometrical way the spectrum of masses and the mean lifetimes of the known and not yet discovered elementary particles, as well as masses of neutrinos, claims that the world requires a 6-dimensional continuum (otherwise particles could not be described), which has very far-reaching philosophical consequences.

Working Team Heim's Theory
IGW Innsbruck, Juni 2003