

<<自旋几何>>

图书基本信息

书名：<<自旋几何>>

13位ISBN编号：9787510029639

10位ISBN编号：7510029635

出版时间：2011-1

出版时间：世界图书出版公司

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页数：427

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内容概要

in the late 1920's the relentless march of ideas and discoveries had carried physics to a generally accepted relativistic theory of the electron. the physicist p.a.m. dirac, however, was dissatisfied with the prevailing ideas and, somewhat in isolation, sought for a better formulation. by 1928 he succeeded in finding a theory which accorded with his own ideas and also fit most of the established principles of the time. ultimately this theory proved to be one of the great intellectual achievements of the period. it was particularly remarkable for the internal beauty of its mathematical structure which not only clarified much previously mysterious phenomena but also predicted in a compelling way the existence of an electron-like particle of negative energy. indeed such particles were subsequently found to exist and our understanding of nature was transformed.

because of its compelling beauty and physical significance it is perhaps not surprising that the ideas at the heart of dirac's theory have also been discovered to play a role of great importance in modern mathematics, particularly in the interrelations between topology, geometry and analysis. a great part of this new understanding comes from the work of m. atiyah and i. singer. it is their work and its implications which form the focus of this book.

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