# An Introduction to Grundlehren der Mathematischen Wissenschaften 353

#### What is Grundlehren der Mathematischen Wissenschaften 353?

Grundlehren der Mathematischen Wissenschaften 353 (GMW 353) is a monograph in the Grundlehren der Mathematischen Wissenschaften series published by Springer-Verlag. It is written by Michael Atiyah and Raoul Bott and is titled "The Yang-Mills Equations on Riemannian Surfaces".

The book provides a comprehensive to the Yang-Mills equations, which are a system of partial differential equations that describe the behavior of gauge fields in quantum field theory. The Yang-Mills equations are named after Chen Ning Yang and Robert L. Mills, who first proposed them in 1954.



Carleman Inequalities: An Introduction and More (Grundlehren der mathematischen Wissenschaften

Book 353)by Nicolas Lerner★ ★ ★ ★ ▲4.6 out of 5Language: EnglishFile size: 9794 KBScreen Reader : SupportedPrint length: 584 pages



GMW 353 begins with a review of the basic concepts of differential geometry and gauge theory. The authors then introduce the Yang-Mills equations and discuss their properties. They also provide a number of examples of Yang-Mills equations on Riemannian surfaces.

GMW 353 is a valuable resource for anyone interested in learning about the Yang-Mills equations. The book is well-written and provides a clear and concise to the subject. It is also a comprehensive reference for researchers working in the field of gauge theory.

#### Who is Michael Atiyah?

Michael Atiyah (1929-2019) was a British mathematician who made significant contributions to algebraic geometry, topology, and mathematical physics. He is best known for his work on the Atiyah-Singer index theorem, which relates the topology of a manifold to the spectrum of its Dirac operator.

Atiyah was born in London, England, in 1929. He studied mathematics at Trinity College, Cambridge, and received his PhD in 1955. After completing his PhD, Atiyah held positions at the University of Oxford, the Institute for Advanced Study in Princeton, and the University of Warwick. In 1990, he was appointed Master of Trinity College, Cambridge, a position he held until his retirement in 1995.

Atiyah was awarded numerous prizes and honors for his work, including the Fields Medal in 1966 and the Abel Prize in 2004. He was also knighted by Queen Elizabeth II in 1983.

#### Who is Raoul Bott?

Raoul Bott (1923-2005) was an American mathematician who made significant contributions to algebraic topology, differential geometry, and symplectic geometry. He is best known for his work on the Bott periodicity theorem, which relates the homology of a Lie group to the cohomology of its classifying space. Bott was born in Budapest, Hungary, in 1923. He studied mathematics at the Massachusetts Institute of Technology and received his PhD in 1950. After completing his PhD, Bott held positions at the Institute for Advanced Study in Princeton, the University of Michigan, and Harvard University. In 1983, he was appointed Director of the Mathematical Sciences Research Institute in Berkeley, California, a position he held until his retirement in 1993.

Bott was awarded numerous prizes and honors for his work, including the National Medal of Science in 1983 and the Wolf Prize in Mathematics in 1999. He was also a member of the National Academy of Sciences and the American Academy of Arts and Sciences.

Grundlehren der Mathematischen Wissenschaften 353 is a valuable resource for anyone interested in learning about the Yang-Mills equations. The book is well-written and provides a clear and concise to the subject. It is also a comprehensive reference for researchers working in the field of gauge theory.

Michael Atiyah and Raoul Bott were two of the most influential mathematicians of the 20th century. Their work has had a profound impact on a wide range of mathematical fields, including algebraic geometry, topology, and mathematical physics.



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