

Gerbe bibliography

ssp

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The line bundle approach / Hitchin gives gerbes by transition functions on triple intersections – analogous to line bundles.

- Nigel Hitchin. What is a gerbe? *Notices of the AMS*, 50:218–219, 2 2003 – an overview article.
- Nigel Hitchin. Lectures on Special Lagrangian Submanifolds. 1999, math.DG/9907034 – chapter 1 gives the analogy to line bundles.
- David Saumitra Chatterjee. *On Gerbs*. PhD thesis, Trinity College, Cambridge, 1998 – introduction, applications in geometry, holonomy in chapter 7.
- Marco Mackaay and Roger Picken. Holonomy and parallel transport for abelian gerbes. *Adv. Math.*, 170(2):287–339, 2002, math.DG/0007053 – local computations.

The bundle gerbe approach / Murray

- M. K. Murray. Bundle gerbes. *J. London Math. Soc. (2)*, 54(2):403–416, 1996, dg-ga/9407015.
- M. K. Murray and D. Stevenson. Higgs fields, bundle gerbes and string structures, 2001, math.DG/0106179.
- Michael K. Murray and Daniel Stevenson. Bundle gerbes: stable isomorphism and local theory, math.DG/9908135 – stable.
- Kiyonori Gomi. Reduction of strongly equivariant bundle gerbes with connection and curving, arXiv:math.DG/0406144 – Summary, equivariant and reduction.

The category approach / Giraud, Brylinski is the most abstract one and probably the setting in which gerbes were invented.

- Jean Giraud. *Cohomologie non abélienne*. Springer-Verlag, Berlin, 1971. Die Grundlehren der mathematischen Wissenschaften, Band 179 – the invention of the topic.

- Jean-Luc Brylinski. *Loop spaces, characteristic classes and geometric quantization*, volume 107 of *Progress in Mathematics*. Birkhäuser Boston Inc., Boston, MA, 1993 – chapters 5 and 6,
- Eric R. Sharpe. Discrete Torsion and Gerbes II. 1999, arXiv:hep-th/9909120 – probably the most readable account of what Brylinski introduced.
- Lawrence Breen and William Messing. Differential Geometry of Gerbes, math.AG/0106083.
- Ieke Moerdijk. Introduction to the language of stacks and gerbes, math.AT/0212266 – includes section 4 on bundle gerbes.

Holonomy / Deligne Cohomology

- Ernesto Lupercio and Bernardo Uribe. An Introduction to Gerbes on Orbifolds, math.DG/0402318.
- Ernesto Lupercio and Bernardo Uribe. Holonomy for Gerbes over Orbifolds, 2001, math.AT/0307114.
- K. Gawędzki. Topological actions in two-dimensional quantum field theories. In *Nonperturbative quantum field theory (Cargèse, 1987)*, volume 185 of *NATO Adv. Sci. Inst. Ser. B Phys.*, pages 101–141. Plenum, New York, 1988 – section 3.
- Paweł Gajer. Higher holonomies, geometric loop groups and smooth Deligne cohomology. In *Advances in geometry*, volume 172 of *Progr. Math.*, pages 195–235. Birkhäuser Boston, Boston, MA, 1999
- Paweł Gajer. Geometry of Deligne cohomology. *Invent. Math.*, 127(1):155–207, 1997
- Hélène Esnault and Eckart Viehweg. Deligne-Beilinson cohomology. In *Beilinson's conjectures on special values of L-functions*, volume 4 of *Perspect. Math.*, pages 43–91. Academic Press, Boston, MA, 1988
- Wilfred W. J. Hulsbergen. *Conjectures in arithmetic algebraic geometry*. Aspects of Mathematics, E18. Friedr. Vieweg & Sohn, Braunschweig, second edition, 1994. A survey – sections 3.2 and 3.3, perhaps a bit too general.

Nonabelian gerbes

- Romain Attal. Combinatorics of Non-Abelian Gerbes with Connection and Curvature. PAR-LPTHE 02/12, 2003, math-ph/0203056.
- Paolo Aschieri, Luigi Cantini, and Branislav Jurco. Nonabelian Bundle Gerbes, their Differential Geometry and Gauge Theory. MPP-2003-139, LMU-TPW 07/03, hep-th/0312154.

Physics related

- Roger Picken. TQFT's and gerbes, 2003, math.DG/0302065.
- Christian Ekstrand. k -gerbes, line bundles and anomalies. *J. High Energy Phys.*, (10):Paper 38, 23, 2000.
- I. Martìn M.I. Caicedo and A. Restuccia. Gerbes and duality. *Annals Phys.*, 300:32–53, 2002, hep-th/0205002.

Other

- Ulrich Bunke. Transgression of the index gerbe, math.DG/0109052.