

Analysis on manifolds
Questions #3, 13.11.2014
(discussion Wed 19.11.2014)

1. Why the Möbius strip is not orientable?
2. Does the Laplace-Beltrami operator Δ_g have analogues of the maximum principle and fundamental solution?
3. What different ways are there for measuring curvature of manifolds in dimensions $n \geq 4$?
4. Are there relations between the Laplace operator and the heat kernel on a Riemannian manifold?
5. Is it possible to prove the uniformization theorem for Riemann surfaces via Ricci flow?
6. Is it possible to construct complex geometrical optics solutions for the operator Δ_g , that could be used in the solution of inverse problems?