

Quasi-Regular Dirichlet Forms on Riemannian Loop Spaces

Bo WU: *School of Mathematical Sciences, Fudan University, Shanghai 200433, China,*

E-mail: wubo@fudan.edu.cn

Xin Chen *Department of Mathematics, Shanghai Jiao Tong University, Shanghai 200240, China*

Key words: Dirichlet form, closability, quasi-regularity, loop space

Mathematical Subject Classification: 60H07

Abstract: In this talk, we construct a large class of quasi-regular local Dirichlet forms on loop spaces over a stochastically complete, non-compact Riemannian manifold. And these Dirichlet forms are quasi-regular and thus, the corresponding diffusion processes are well-constructed by the theory of Dirichlet forms.

Main References

- [1] B. K. Driver, M. Röckner(1992), Construction of diffusions on path and loop spaces of compact Riemannian manifolds, *C. R. Acad. Sci. Paris Séries*, **I 315**, 603–608
- [2] J.-U. Löbus(2004), A class of processes on the path space over a compact Riemannian manifold with unbounded diffusion, *Tran. Ame. Math. Soc.*, **356** 3751-3767
- [3] F. Y. Wang, B. Wu(2008), Quasi-Regular Dirichlet Forms on Riemannian Path and Loop Spaces, *Forum Math.*, **20**, 1085–1096
- [4] X. Chen, B. Wu(2014), Functional inequality on path space over a non-compact Riemannian manifold, *J. Funct. Anal.*, **266** 6753-6779