**Name :** Shigeki Aida

**Research field:** Probability theory

**Key words:** Infinite dimensional analysis, Malliavin calculus, Rough paths, Stochastic analysis on loop spaces, Functional inequalities, Stochastic differential equations, Rough differential equations, Asymptotic error distribution, Semiclassical limit

**Present research:** I am interested in probability theory and infinite dimensional analysis arsing from the study of problems in probability theory. For example, I am studying the semi-classical limit of infinite dimensional Schrödinger operators, asymptotic behavior of the spectral gap on loop spaces. In these studies, functional inequalities, e.g., logarithmic Sobolev inequalities, play important role and I am interested in the study of functional inequalities also. Solutions of stochastic (or rough) differential equations are typical non-linear functionals in probability theory and the study is important from both sides of the theory and applications. In this respect, I am interested in rough path analysis and Malliavin calculus.

**Notice for students:**

Students who want to study in my laboratory should be familiar with Lebesgue integration, discrete martingale theory and basic functional analysis as well as calculus and linear algebra.