# Malliavin calculus and normal approximations

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**Abstract:**
The Malliavin calculus, introduced by Paul Malliavin to provide a probabilistic proof of Hrmanders hypoellipticity theorem, extends the classical calculus of variations to the Wiener space. The purpose of this course is to present the basic elements of Malliavin calculus and develop its applications to derive quantitative central limit theorems in combination with Steins method for normal approximations. We will also present the application of Malliavin calculus to show tightness in the context of functional limit theorems.