

Questions for Lecture 5

While reading *Chapter 4.4–4.5, 5.1–5.2* of [G], ask yourself:

- What happens and does it mean if the time horizon tends to infinity?
- What are the consequences for the PDEs and SDEs if we consider \mathbb{R}^d or bounded domains? How do the different pictures correspond to each other?
- How do you show that the Euler–Maruyama scheme is a square integrable Itô process? Look at the proof carefully.
- When would a Brownian bridge construction be useful?
- Ignore the statistical error for now. We take care of it together with Monte Carlo methods in the next lecture.
- Carefully understand the strong convergence proof.
- Why does L^p convergence imply almost sure convergence with essentially the same rate?