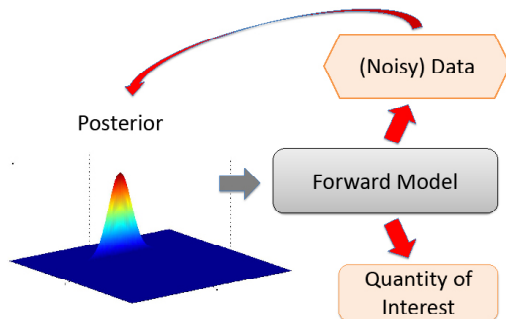


Tuesday 22 February 2022

Online (Zoom)



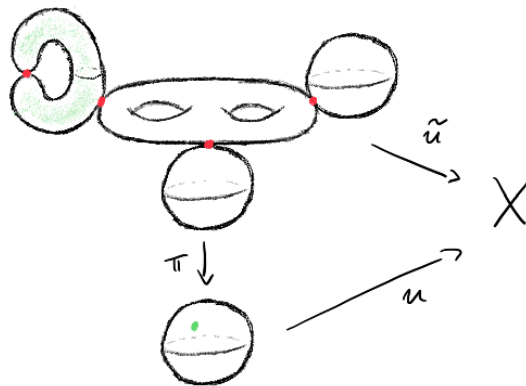
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10:00 Claudia Schillings (*U Mannheim/ FU Berlin*)

Uncertainty Quantification and Inverse Problem

Uncertainty quantification is an interesting, fast growing research area aimed at developing methods to address the impact of parameter, data and model uncertainty in complex systems. This talk will focus on the identification of parameters through observations of the response of the system – the inverse problem. The uncertainty in the solution of the inverse problem will be described via the Bayesian approach. Schillings will then derive Bayes' theorem and discuss mathematical challenges as well as applications.

From March 2022, Claudia Schillings will be a professor of Numerical Analysis at FU Berlin. Her research interests focus on the development of efficient methods for large-scale inverse optimization problems in the presence of uncertainty in measurements, models and parameters. ▲



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17:00 Thomas Walpuski (*HU Berlin*)

Invariants of manifolds arising from partial differential equations

Manifolds (with additional structure) are the fundamental objects of interest in differential geometry. An effective way to probe manifolds is to "do physics" on them. Gauge theory and string theory, in particular, lead to fascinating geometric partial differential equations. From their solution spaces one can often extract rich algebraic invariants. This talk will (very roughly) sketch the construction of one such invariant and discuss a recent structure theorem for these invariants.

Thomas Walpuski is a professor of mathematics at HU Berlin. His current research interests are differential geometry, gauge theory, symplectic geometry, and geometric analysis. ▲