Research Profile — Martin Eigel (RG4)

- **Scientific areas**: Numerical Analysis, Uncertainty Quantification
- **Research topics**: high-dimensional PDEs, Scientific Machine Learning, inverse problems, tensor approximations
- **Other interests**: cell biology, quantum computing, computer graphics, Bach

Favourite projects:

- Numerical Upscaling of Random Microstructures
  An effective macro random field is obtained by Bayesian inference with microstructure realizations.
- Low-Rank Tensor Compression for SDEs
  Polynomial chaos approximations of stochastic processes easily become very high dimensional. Fortunately, low-rank compression seem feasible.
- Adaptive Neural Networks for Parametric PDEs
  Successive NN learning of PDE residuals.