

# An elementary proof of the reconstruction theorem

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## **Abstract**

This talk is concerned with Martin Hairer's theory of regularity structures. After recalling its basic concepts such as models, modelled distributions and reconstruction, we answer the following elementary question: In what sense are smooth models dense in the space of all models? This is done by introducing mollification, an ubiquitous tool in analysis, within the framework of regularity structures. Mollification, combined with the existence of a universal dense subspace of the space of all modelled distributions, allows for an elementary proof of the reconstruction theorem. If time permits, I shall explain how these considerations yield in particular a non-standard approximation result in rough path theory.

This is joint work with Josef Teichmann.