Quasilinear SPDEs via multi-indices

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In this talk we present an alternative point of view on Hairer's regularity structures that is well suited, but not restricted to, quasilinear SPDEs. Guided by symmetries of the equation, we approach the counterterm top-down rather than bottom-up. The model, which captures the local solution behaviour, is indexed by partial derivatives w.r.t. the nonlinearity. This allows for efficient bookkeeping and automated (inductive) proofs. The main assumption on the driving noise is a spectral gap inequality, which complements well the BPHZ choice of renormalization. This is joint work with Pablo Linares, Felix Otto, and Pavlos Tsatsoulis.