

Accuracy and uncertainty control for ML-Amplitudes

Nina Elmer

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arXiv: 2412.12069

with L. Favaro, M. Haußmann, R. Winterhalder and T. Plehn

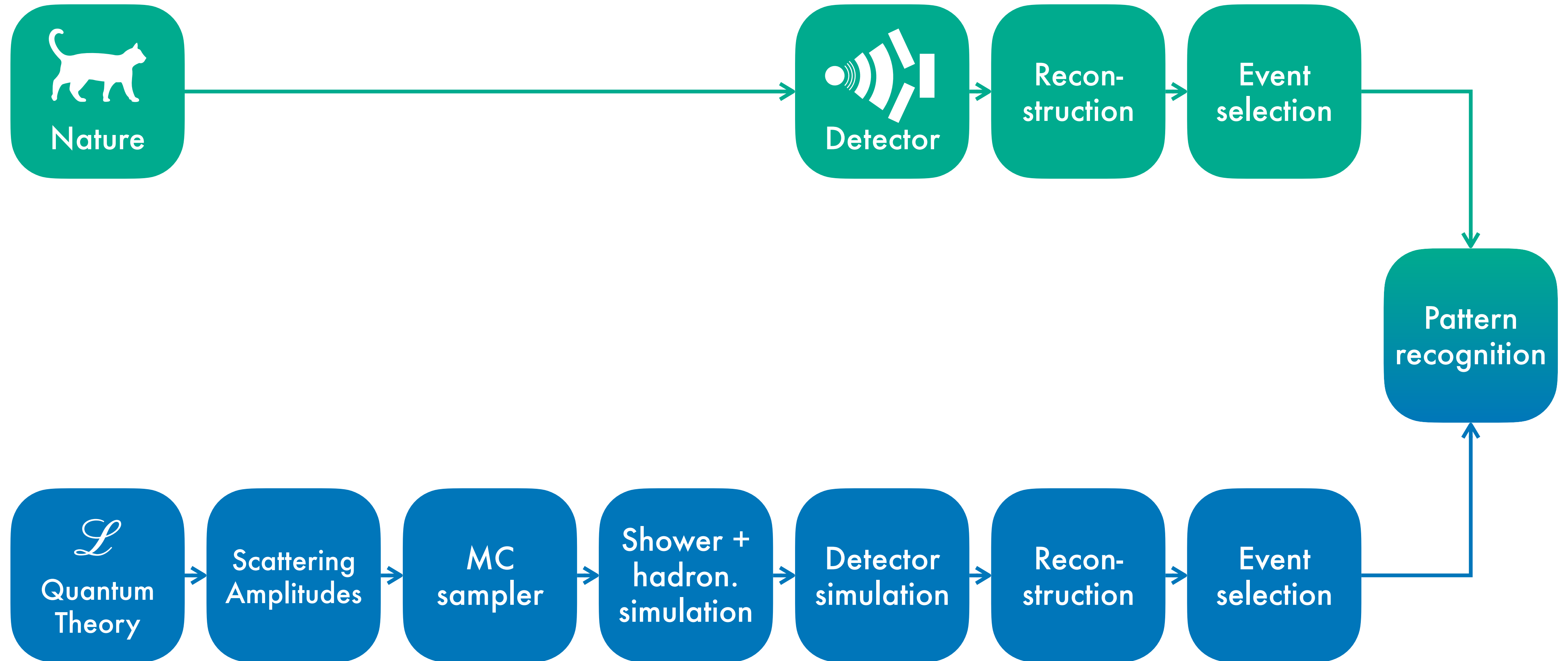


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SEIT 1386

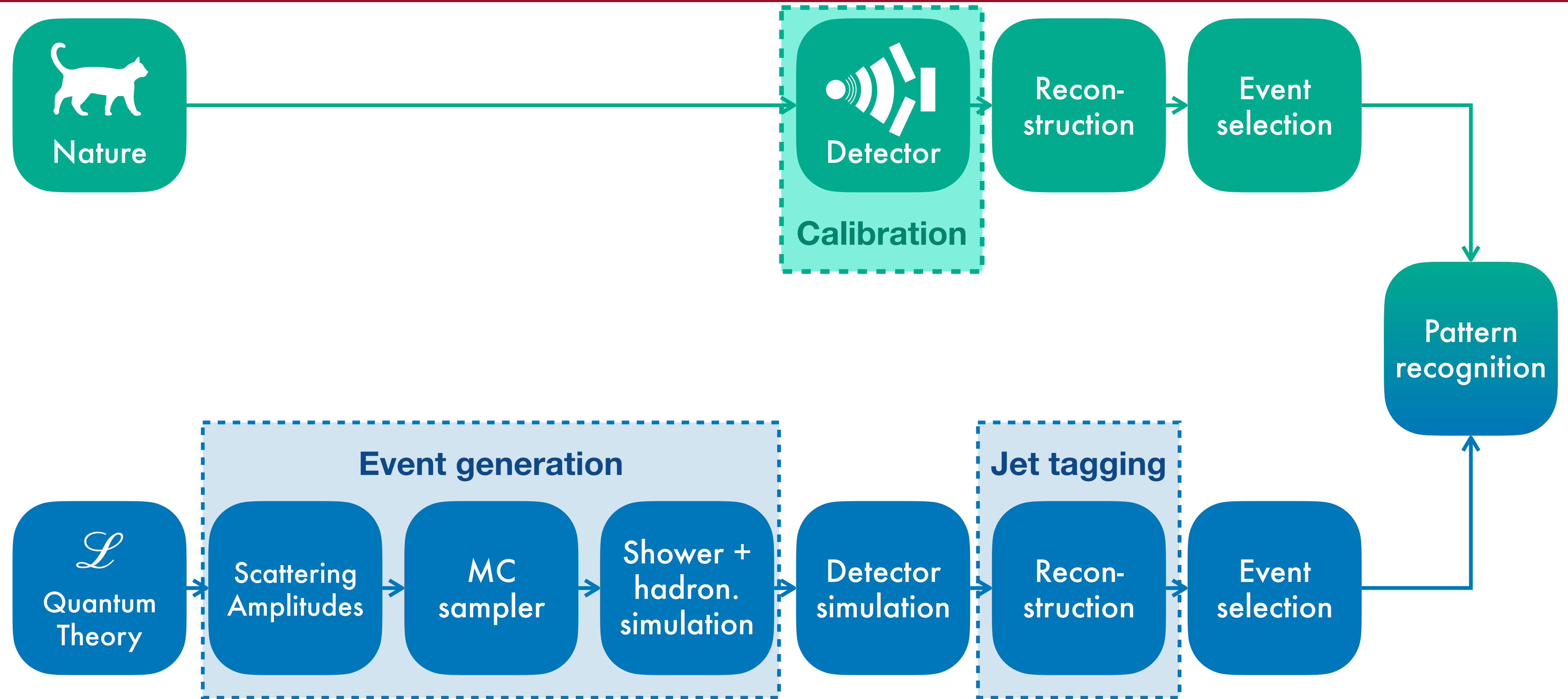
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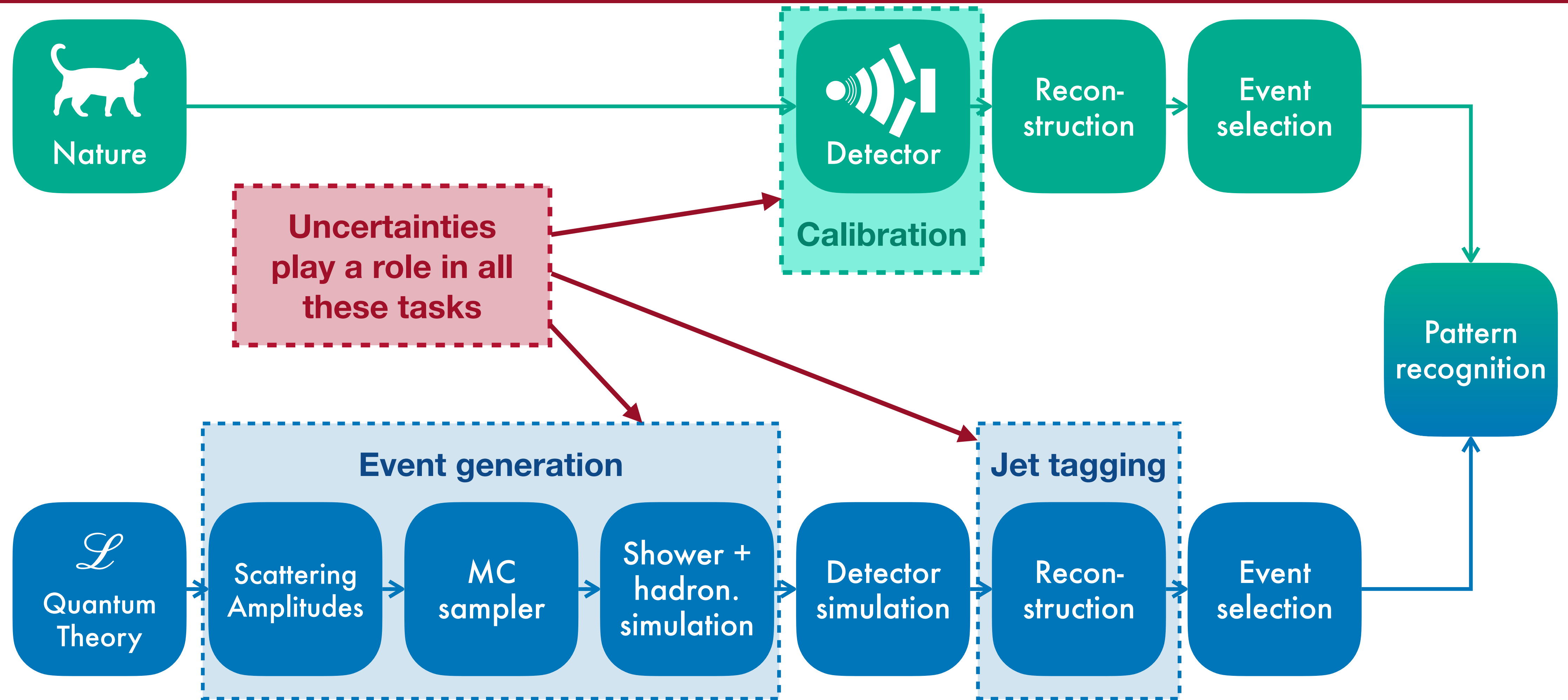
LHC physics and machine learning



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Motivation

- **Reliable interpolation** of two-loop amplitudes [[2412.09534](#)]
- Scaling up to $Z + 5j$ [[2411.00446](#)]
- Amplitude surrogates part of MadGraph and MadNIS (besides generative integration)
→ Theo's talk

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- Improve theory predictions for LHC:

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- Can they be controlled?
- Two types of uncertainties:

