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How to make ultra-fast predictions with neural network emulators (Boris Bolliet / Cambridge University)

Tuesday, 16 July 2024 10:30 (2 hours)

We will explain how train a neural network which evaluates the Cosmic Microwave
Background (CMB) power spectra a thousand times faster than a full Boltzmann solver. We will work with
a Google Colab notebook and build a simple neural network from scratch, using training data that will be
provided. We will adopt and follow the strategy presented in Alsing et al (2020), Spurio-Mancini et al (2022),
and Bolliet et al (2024). Although our example is based on CMB spectra, our approach is general and applicable
to a wide range of problems of interpolation in high-dimensional space.

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