

evermore: differentiable binned likelihoods in JAX

Tuesday, October 28, 2025 5:20 PM (20 minutes)

evermore is a software package for statistical inference using likelihood functions of binned data. It fulfils three key concepts: performance, differentiability, and object-oriented statistical model building. evermore is build on JAX - a powerful autodifferentiation Python framework. By making every component in evermore a "PyTree", each component can be jit-compiled (`jax.jit`), vectorized (`jax.vmap`) and differentiated (`jax.grad`). This enables additionally novel computational concepts, such as running thousands of fits simultaneously on a GPU or differentiating through measurements of physical observables. We present the key concepts of evermore, show its features, and discuss performance benchmarks with toy datasets.

Authors: ZINN, Felix Philipp (Rheinisch Westfaelische Tech. Hoch. (DE)); FACKELDEY, Manfred Peter (Princeton University (US))

Presenters: ZINN, Felix Philipp (Rheinisch Westfaelische Tech. Hoch. (DE)); FACKELDEY, Manfred Peter (Princeton University (US))

Session Classification: Plenary Session Tuesday (4)