- High-precision Lattice QCD predictions are extremely important.

$$\Downarrow$$

Quoting errors as reliably as possible.

- Given N correlated measurements O_i, we define the *autocorrelation function*

$$\Gamma(t) \equiv \langle (O_i - \langle O \rangle)(O_{i+t} - \langle O \rangle) \rangle \,, \quad \Longrightarrow \quad \sigma_O^2 = \frac{1}{N} \sum_{t=-\infty}^{\infty} \Gamma(t) \,,$$

  In practice, the sum is approximated up to an (optimal) summation window.

- **Bounding Method**: exploiting Γ's properties, **strict** upper and lower bounds of Γ (and the error) can be introduced:

$$\Downarrow$$

Automatic windowing procedure by balancing the systematic error (from the bounds) and the statistical error of the error.

- Tested in traditional Monte Carlo simulations and in 1D Master-Field analysis, where actually finds its natural setting.