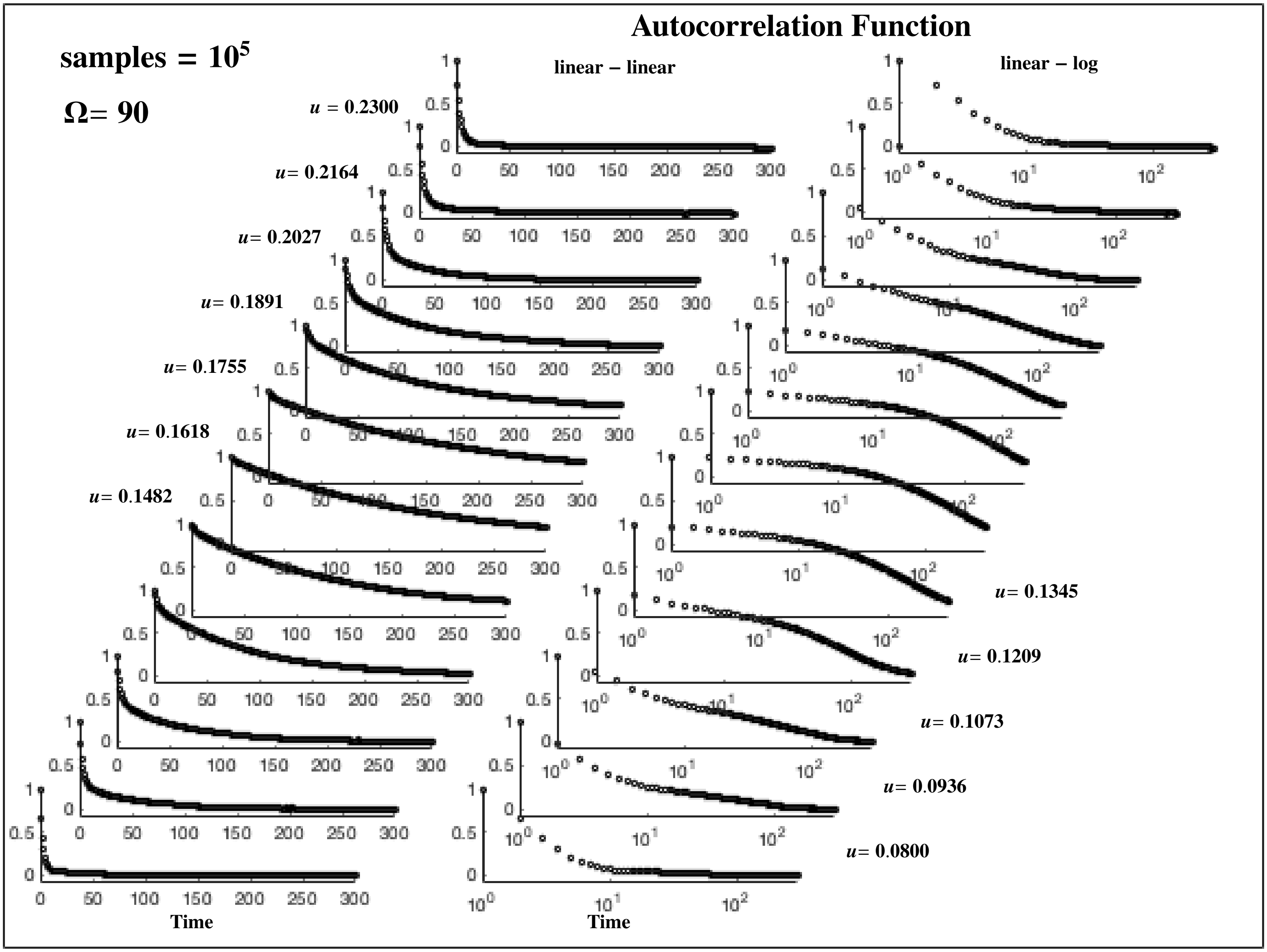

I. AUTOCORRELATIONS

The autocorrelation function is defined as

$$E[x(t_1)x(t_0)] - E[x(t_1)]E[x(t_0)]$$

where t_0, t_1 are times of propagation of the Markov chain. And E is an average over an ensamble of simulations. For a system in equilibrium we have

$$\frac{dP(x,t)}{dt} = 0 \implies E[x(t_1)] = E[x(t_0)] = \langle x \rangle$$
$$\implies E[x(t_1)x(t_0)] = \langle x(0)x(t_1 - t_0) \rangle$$

Where $\langle \cdot \rangle$ is an average over time point measurements.
The autocorrelation function is defined as

$$A(t) = \frac{\langle x(0)x(t) \rangle - \langle x \rangle^2}{\langle x^2 \rangle - \langle x \rangle^2}$$

So that $A(0) = 1$ and $A(\infty) = 0$.
The autocorrelation function becomes a stretched exponential in the region of bistability.