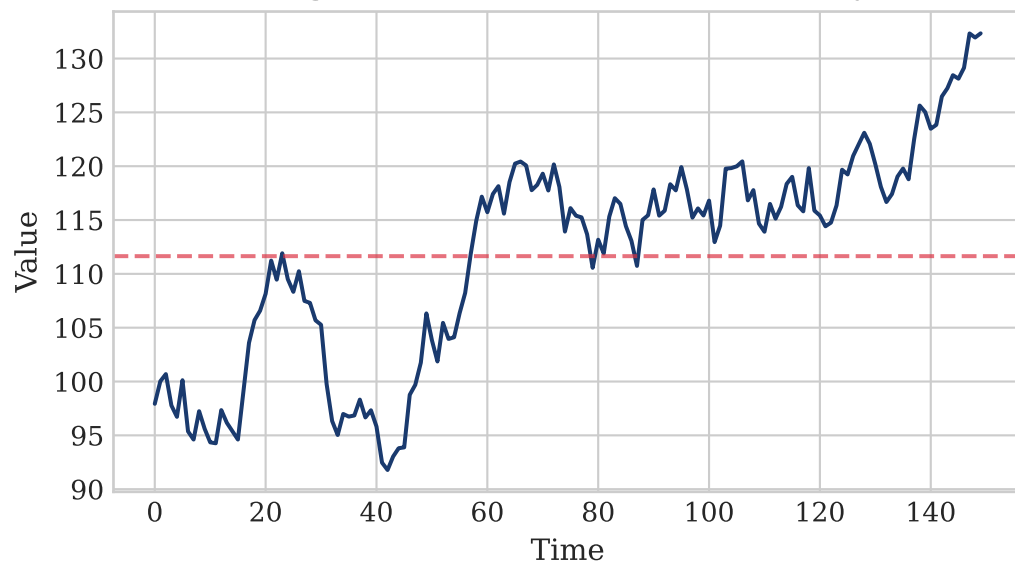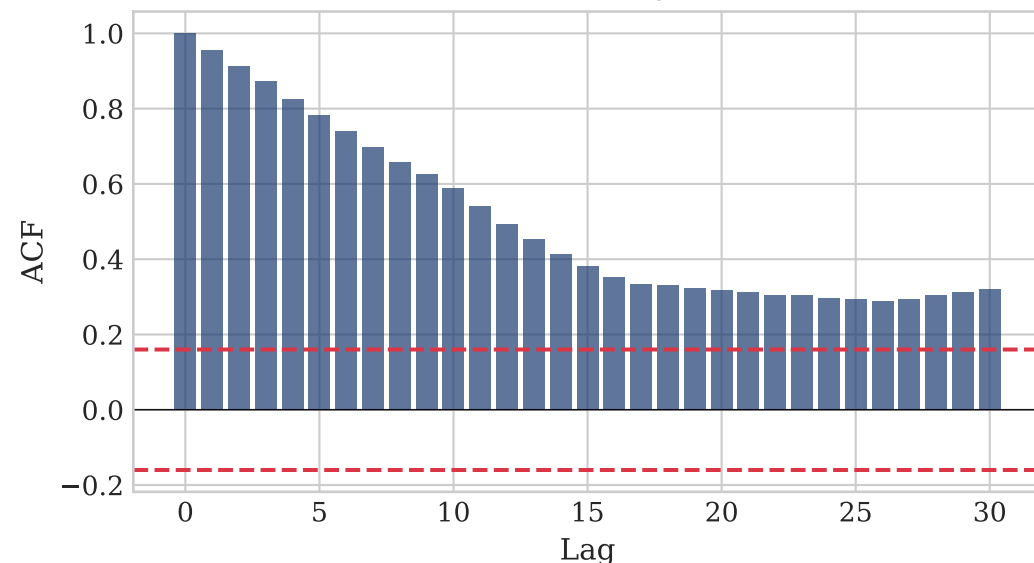**The Magic of Differencing: Converting Non-Stationary to Stationary**
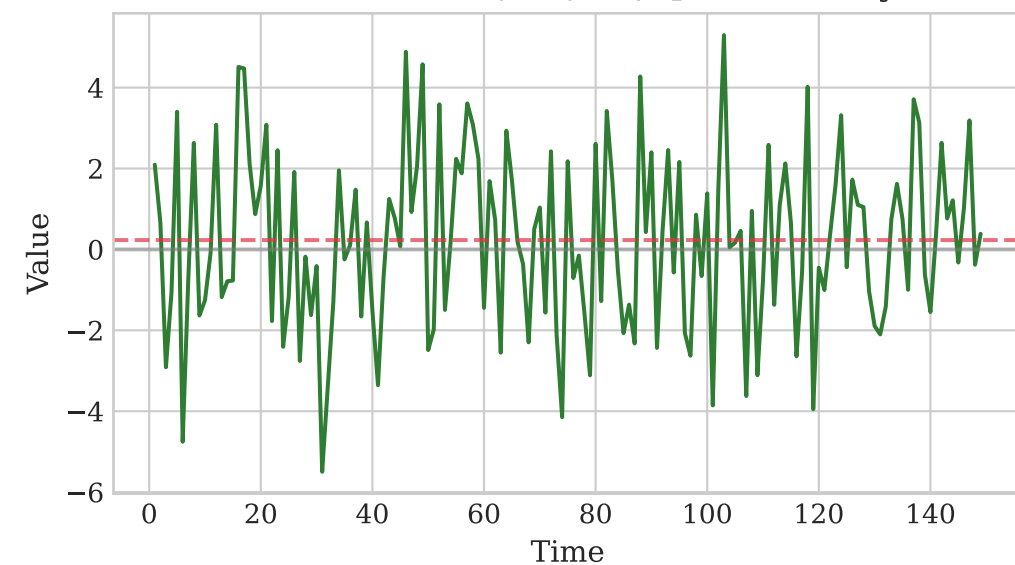
Original Series: Y_t (Non-Stationary)

ACF of Y_t: Slow Decay (Unit Root)

Differenced: $\Delta Y_t = Y_t - Y_{t-1}$ (Stationary)

ACF of ΔY_t: Quick Decay (Stationary)