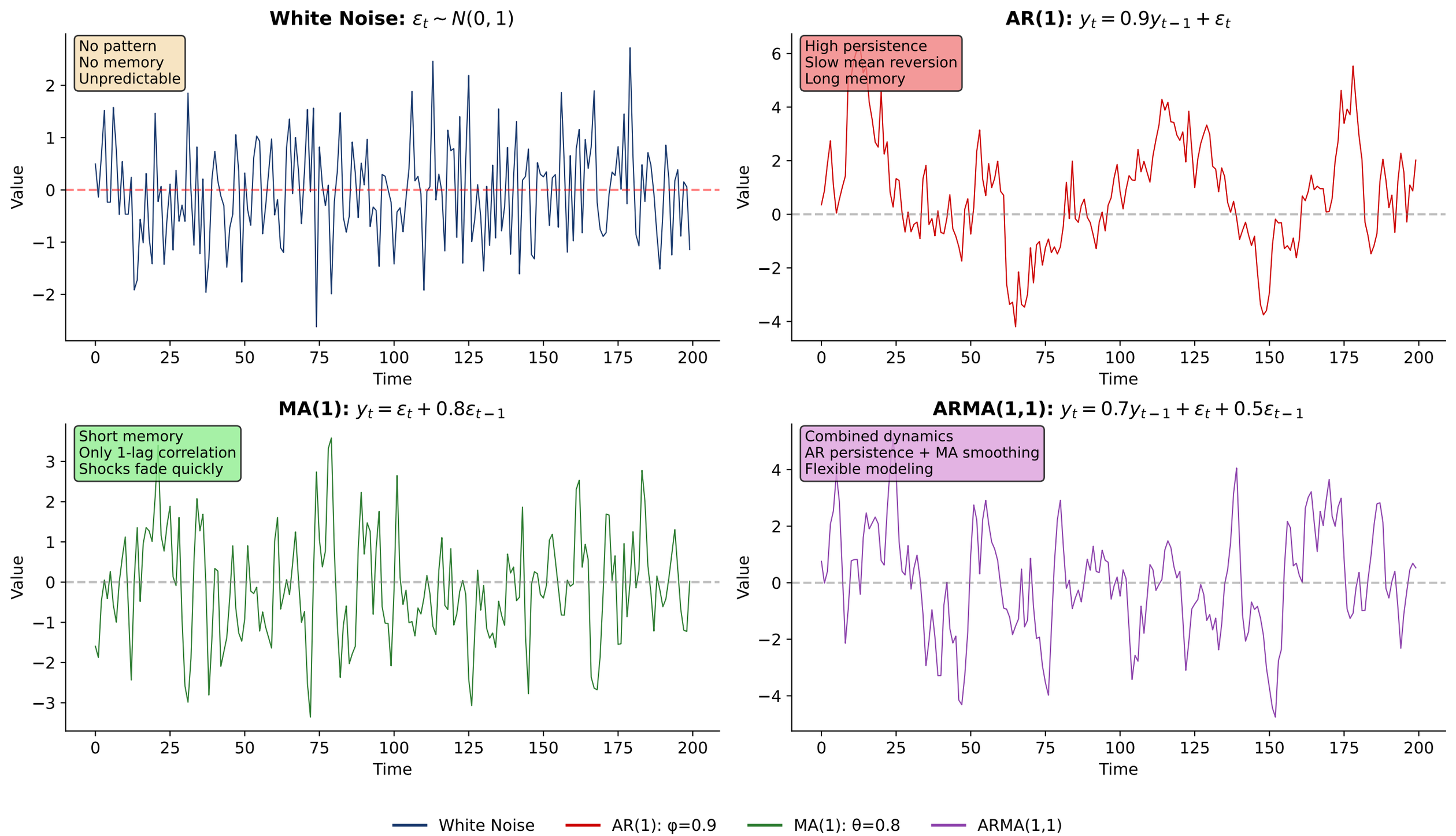
White Noise: $\varepsilon_t \sim N(0,1)$
No pattern
No memory
Unpredictable
AR(1): $y_t = 0.9y_{t-1} + \varepsilon_t$
High persistence
Slow mean reversion
Long memory
MA(1): $y_t = \varepsilon_t + 0.8\varepsilon_{t-1}$
Short memory
Only 1-lag correlation
Shocks fade quickly
ARMA(1,1): $y_t = 0.7y_{t-1} + \varepsilon_t + 0.5\varepsilon_{t-1}$
Combined dynamics
AR persistence + MA smoothing
Flexible modeling
Value
Time
White Noise
AR(1): φ=0.9
MA(1): θ=0.8
ARMA(1,1)