Model	Biological Meaning	Fitted Parameters	Variance-Covariance Equation
Brownian Motion (BM)	Trait evolution via random walk	σ^2, z_0	$\sigma^2 t_{ij}$
Ornstein-Uhlenbeck (OU)	Trait evolution with stabilizing selection	α, σ^2, z_0	$\frac{\sigma^2}{2\alpha}\left(1 - e^{-2\alpha t_{ij}}\right)$
Early Burst (EB)	Evolutionary rates decrease over time	a, σ^2, z_0	$\sigma_0^2 \frac{e^{a s_{ij}} - 1}{a}$
Pagel's Lambda	Trait evolution with phylogenetic signal	λ, σ^2, z_0	$\begin{cases} \sigma^2 t_{ij}, & \text{if } i = j \\ \lambda \sigma^2 t_{ij}, & \text{if } i \neq j \end{cases}$
Pagel's Delta	Evolutionary rates vary over time	δ, σ^2, z_0	$\sigma^2 (t_{ij})^\delta$
Pagel's Kappa	Evolutionary changes follow a speciational pattern	κ, σ^2, z_0	$\sigma^2 (t_{ij})^\kappa$
Rate Trend	Evolutionary rates increase or decrease over time	$\text{slope}, \sigma^2, z_0$	$\sigma^2 (1 + \text{slope} \cdot t_{ij})$
Mean Trend	Trait evolution with directional trend	$\text{drift}, \sigma^2, z_0$	$\sigma^2 t_{ij}$
White Noise	Trait values are independently normally distributed	σ^2, z_0	$\begin{cases} \sigma^2 & \text{if } i = j \\ 0 & \text{if } i \neq j \end{cases}$

Table 1: Comparison of models in phylogenetic trait evolution.