**Table S3**: Results of LRTs conducted between each pair of selection models for selection acting on clutch size and laying date in blue tits.

|  |  |  |  |
| --- | --- | --- | --- |
| Models pairs compared | χ² | Degree of freedom | *P* |
| M1 vs. M2 | 0.581 | 1 | 0.446 |
| M1 vs. M3 | 11.92 | 1 | < 0.001 |
| M2 vs. M4 | 11.79 | 1 | < 0.001 |

$$M1: w\_{i}=α+β\_{LD}.LD\_{i}+β\_{CS}.CS\_{i}+e\_{i}$$

$$M2: w\_{i}=α+β\_{LD}.LD\_{i}+β\_{CS}.CS\_{i}+b\_{MEAN,LD}. LD\_{i}.MEAN\_{i}+ei$$

$$M3: w\_{i}=α+β\_{LD}.LD\_{i}+β\_{CS}.CS\_{i}+b\_{ECE,LD}. LD\_{i}.ECE\_{i}+e\_{i}$$

$$M4: w\_{i}=α+β\_{LD}.LD\_{i}+β\_{CS}.CS\_{i}+b\_{ECE,LD}. LD\_{i}.ECE\_{i}+b\_{MEAN,LD}. LD\_{i}.MEAN\_{i}+e\_{i}$$

where *w* is the relative fitness, *i* refers to the individual values of fitness, measured traits (LD and CS for laying date and clutch size respectively) and residuals$e\_{i}$. β values can be interpreted as directional selection gradients (27) of the laying date and clutch size. *b*ECE,LD and *b*MEAN,LD are the estimated terms for the interaction of values of laying date and the annual values of the ECE (ECE*i*) and the MEAN (MEAN*i*) climatic variables. MEAN variable referred to the mean daily temperature and / or precipitation experienced by broods during a specific nestling period, averaged across all broods.