

**TABLE S7** | Results from MRM based on GLMs for both Rabosky *et al.* (2018) (genetic + polytomies) and Cassemiro *et al.* (2023) (genetic) phylogenies.

predictors	PBsimRabosky	pvalue_PBsimRabosky	PBsimCasse	pvalue_PBsimCasse
(Intercept)	-1.16	0,00	-1.37	0,00
D_energ_s	-0.21	0.15	-0.27	0.12
D_water_s	0.02	0.83	0.04	0.66
D_temp_s	0.15	0.27	-0.08	0.63
D_Habitat_size_s	0.05	0.38	0.08	0.24
D_Habitat_Div_s	<b>0.09</b>	<b>0.09</b>	0.06	0.38
D_Habitat_harsh_s	<b>0.25</b>	<b>0,00</b>	<b>0.23</b>	<b>0,00</b>
D_Habitat_position_s	0.03	0.72	-0.1	0.28
D_Habitat_fragm_s	-0.02	0.78	-0.04	0.58
D_Habitat_water_s	<b>-0.12</b>	<b>0.01</b>	<b>-0.17</b>	<b>0,00</b>
D_Habitat_SampEff_s	<b>-0.25</b>	<b>0,00</b>	<b>-0.31</b>	<b>0,00</b>
D_Marine_Incurs_s	-0.13	0.15	-0.13	0.24
D_CurrentLGM_s	<b>0.13</b>	<b>0.09</b>	<b>0.15</b>	<b>0.09</b>
D_Pebas23mya_s	<b>-0.13</b>	<b>0.09</b>	<b>-0.2</b>	<b>0.03</b>
D_hydro_s	0.03	0.48	0.02	0.61
D_spat_s	<b>0.4</b>	<b>0,00</b>	<b>0.51</b>	<b>0,00</b>
dev	186.92	4640	256.54	4640

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