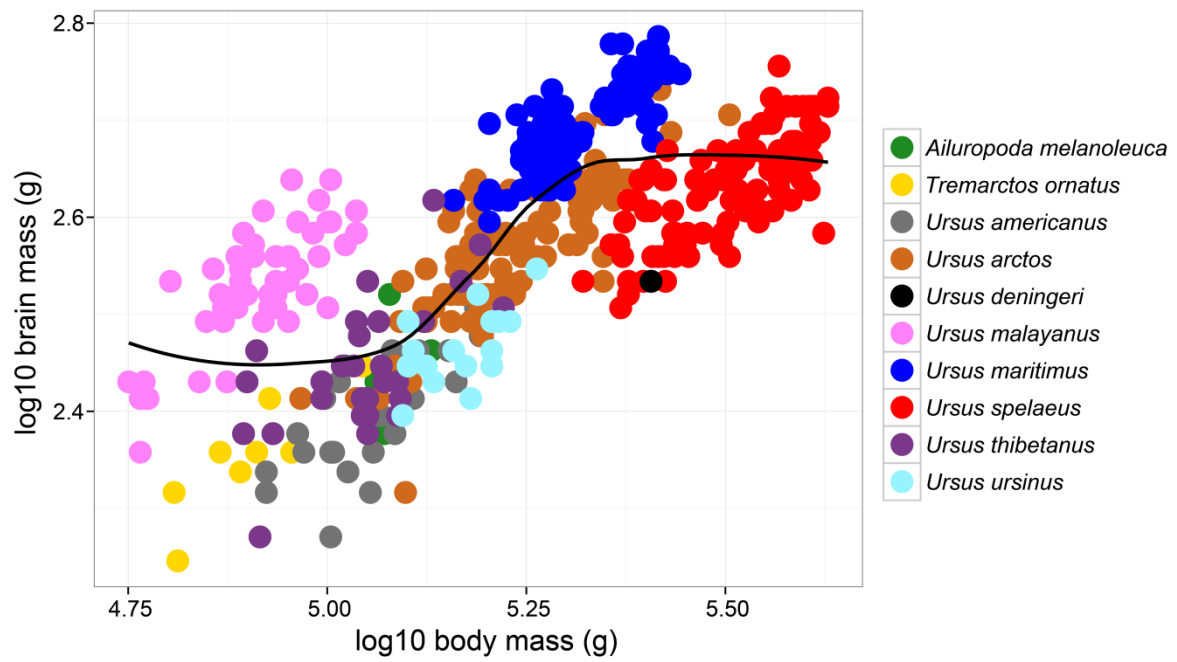


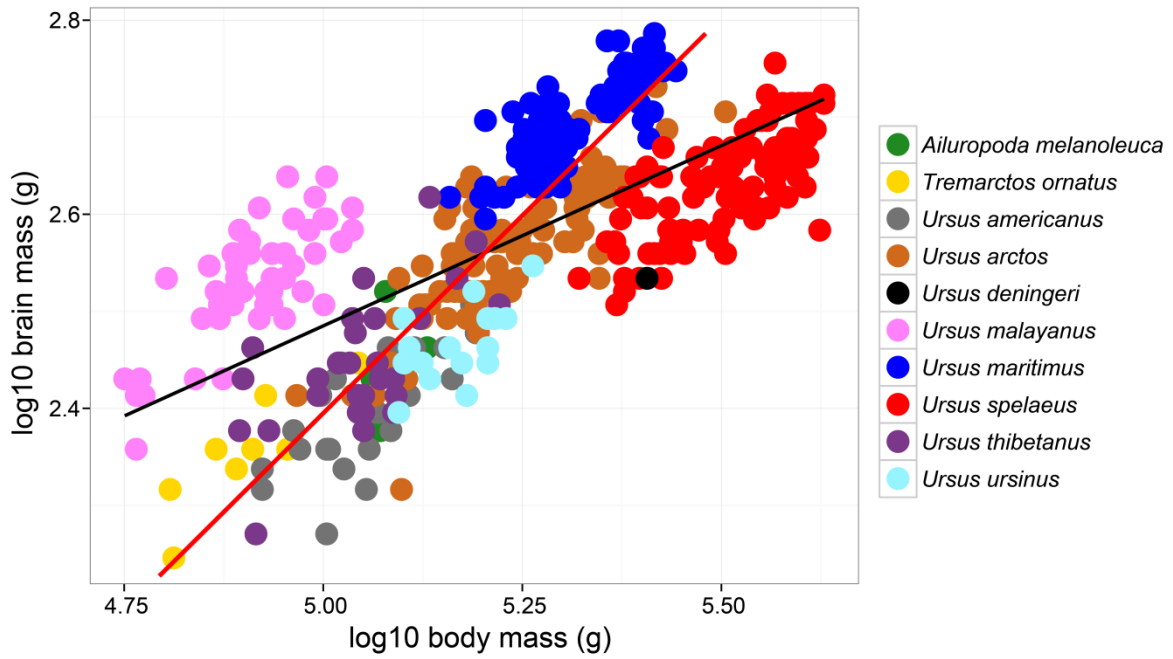
Supplementary Information: The effect of body size evolution and ecology on encephalization in cave bears and extant relatives (Kristof Veitschegger)

Supplementary Table 4: Results of the different linear models investigated in this study.

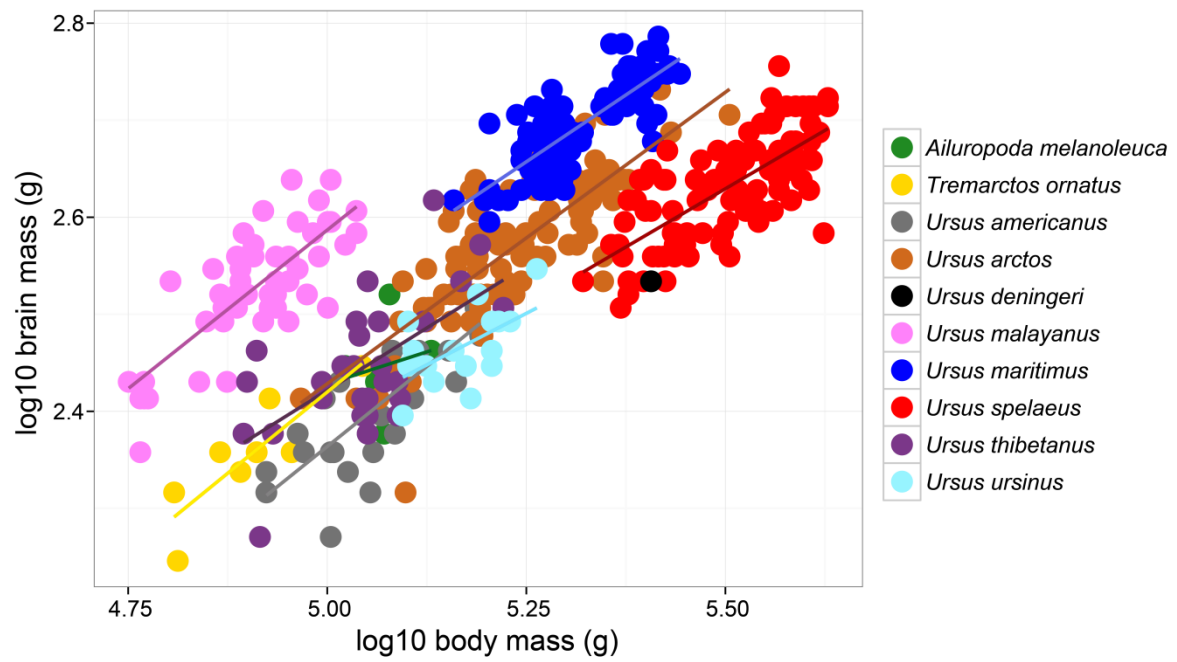
Model	Intercept	Std. Error	t	p	Slope	Std. Error	t	p	multiple R ²	adjusted R ²
OLS (individual datapoints)	0.6268	0.0946	6.6250	<0.0001	0.3716	0.0180	20.6070	<0.0001	0.5088	0.5076
OLS (individual datapoints), without <i>Ursus malayanus</i> and <i>Ursus spelaeus</i>	-1.6605	0.1274	-13.0400	<0.0001	0.8113	0.0245	33.1700	<0.0001	0.8089	0.8081
PGLS	0.2462	0.7039	0.3498	0.7368	0.4398	0.1370	3.2108	0.0148	0.5956	0.5378
PGLS, without <i>Ursus malayanus</i> and <i>Ursus spelaeus</i>	-1.5100	0.6477	-2.3314	0.0671	0.7807	0.1266	6.1678	0.0016	0.8838	0.8606



Supplementary Figure 1: Scatterplot of log10 brain mass (g) against log10 body mass (g) with a LOESS curve (local polynomial regression). Note that *Ursus malayanus* and *Ursus spelaeus* heavily skew the line in opposite directions, thus introducing bias to the linear model. Other bear species fall on one line.



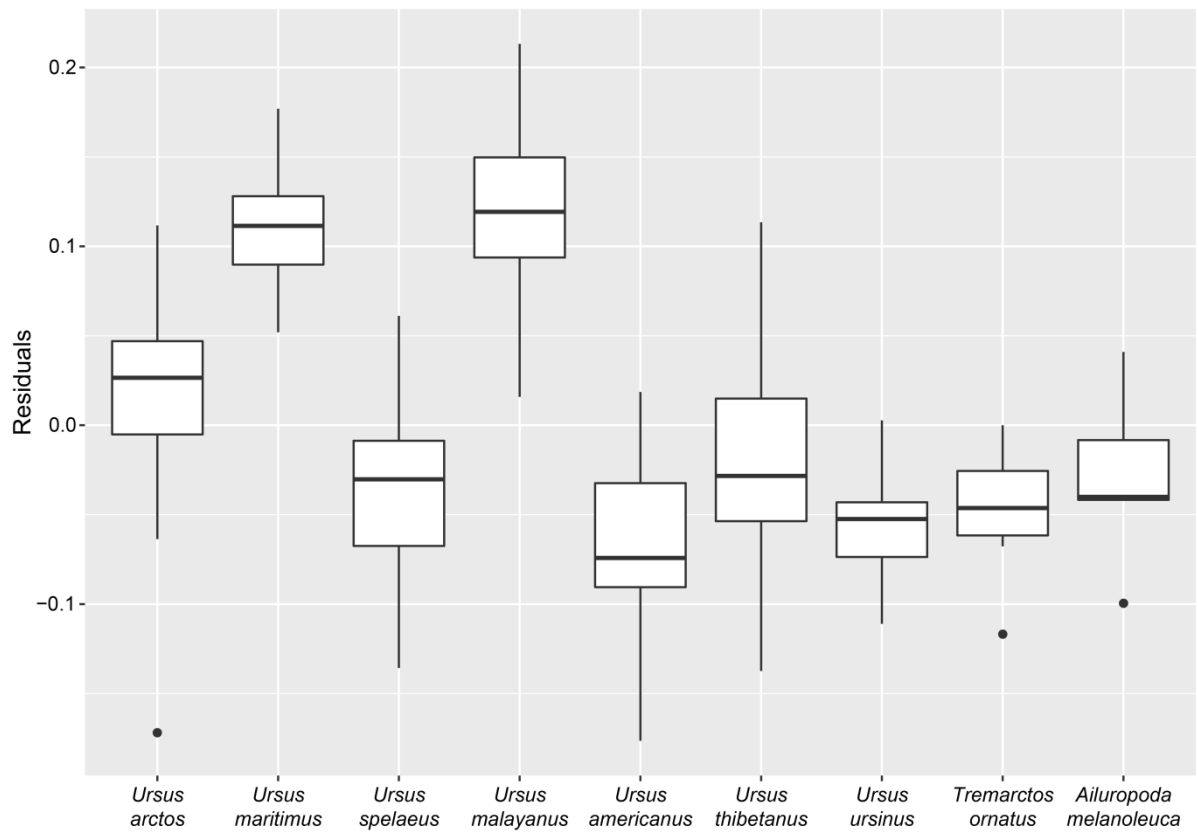
Supplementary Figure 2: Scatterplot of log10 brain mass (g) against log10 body mass (g) with a OLS regression lines (ordinary least squares). In black is the OLS regression line for all data points, in red the OLS regression line without *Ursus malayanus* and *Ursus spelaeus*. (details in Supplementary Table 4)



Supplementary Figure 3: Scatterplot of log10 brain mass (g) against log10 body mass (g) with OLS regression lines (ordinary least squares) for each species.

Supplementary Table 5: Slopes and intercepts based on OLS for all bear species as presented in Supplementary Figure 3.

Model	Intercept	Std. Error	t	p	Slope	Std. Error	t	p	multiple R ²	adjusted R ²
<i>Ailuropoda melanoleuca</i>	1.1051	3.8413	0.2880	0.7920	0.2646	0.7572	0.3490	0.7500	0.0391	-0.2812
<i>Tremarctos ornatus</i>	-0.9296	0.7951	-1.1690	0.2867	0.6699	0.1622	4.1300	0.0061	0.7398	0.6965
<i>Ursus americanus</i>	-0.9378	0.5494	-1.7070	0.0997	0.6603	0.1085	6.0850	<0.0001	0.5875	0.5716
<i>Ursus arctos</i>	-0.5754	0.2382	-2.4160	0.0177	0.6008	0.0455	13.2160	<0.0001	0.6575	0.6537
<i>Ursus malayanus</i>	-0.6836	0.3712	-1.8420	0.0717	0.6541	0.0756	8.6520	<0.0001	0.6093	0.6012
<i>Ursus maritimus</i>	-0.2354	0.2416	-0.9740	0.3330	0.5510	0.0454	12.1300	<0.0001	0.6478	0.6434
<i>Ursus spelaeus</i>	-0.0146	0.2652	-0.0550	0.9560	0.4807	0.0482	9.9750	<0.0001	0.5064	0.5013
<i>Ursus thibetanus</i>	-0.1497	0.6304	-0.2370	0.8141	0.5143	0.1249	4.1180	0.0003	0.3858	0.3630
<i>Ursus ursinus</i>	0.2687	0.7664	0.3510	0.7308	0.4252	0.1484	2.8650	0.0118	0.3537	0.3106



Supplementary Figure 4: Distribution of residuals based on PGLS (phylogenetic generalized least squares) on all species. Note the higher values for *Ursus spelaeus* compared to the main analysis.