Supplementary figures and tables for Geomorphic indicators of continental-scale landscape transience in the Hengduan Mountains, SE Tibet, China

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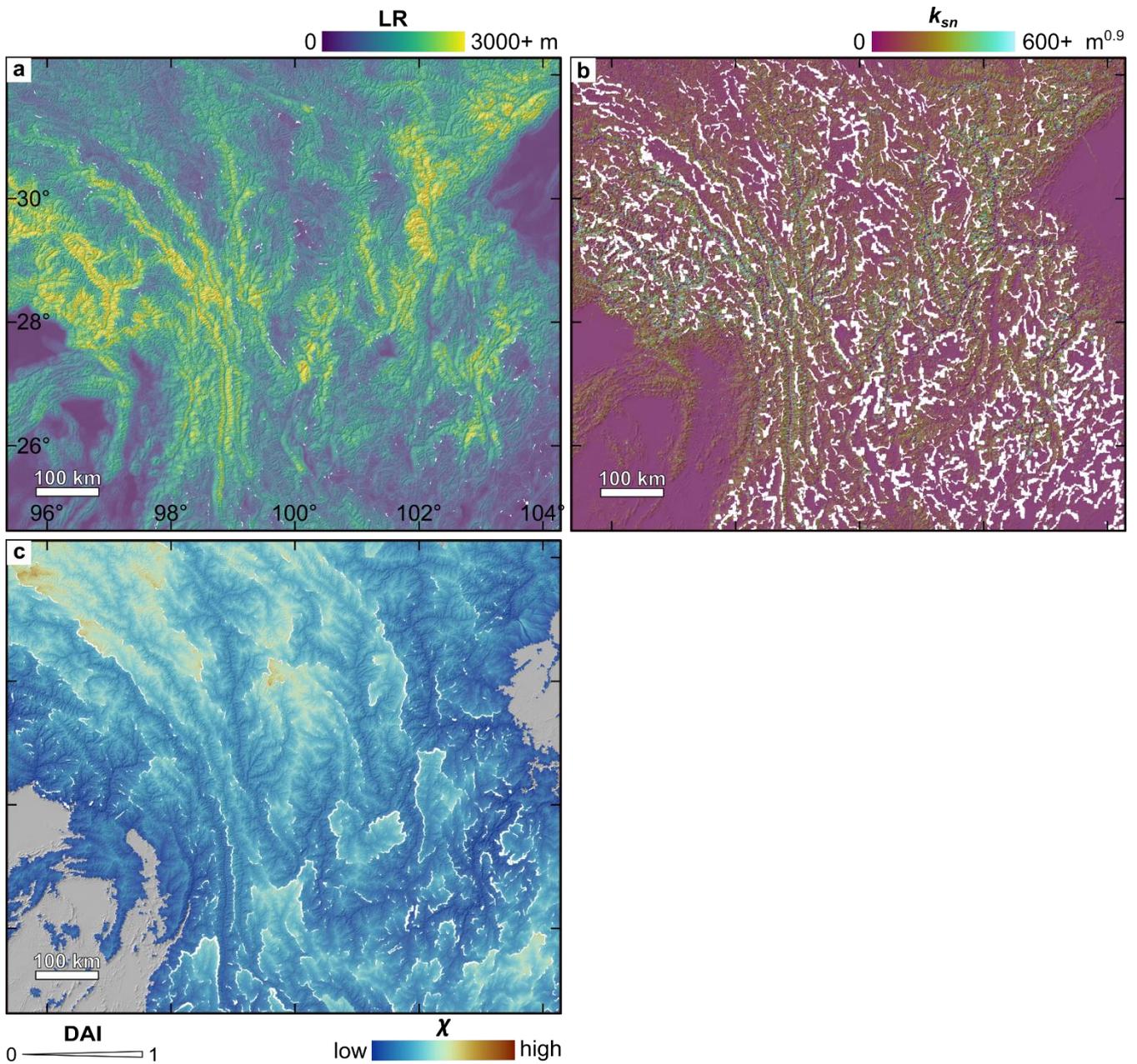
Figure S1. Maps of geomorphic metrics across the HDM and corresponding divide asymmetry for metrics not included in main text. Panels show local relief (LR; a), normalized channel steepness without precipitation correction (k_{sn}; b), and χ without the precipitation correction (χ; c). White lines are drainage divides, with thicker lines indicating a higher divide asymmetry index (DAI) for the specific metric.

Table S1. Statistics for drainage divide asymmetry magnitude (DAI) by metric. STDV is standard deviation and IQR is interquartile range. High and low asymmetry thresholds for each metric correspond to the 95th and 5th percentiles, respectively.

Metric	Mean	STDV	Median	IQR	Min	5th Percentile	95th Percentile	Max
CRR	0.0543	0.0559	0.0305	0.0544	1.80E-05	0.0040	0.1623	0.9674
LR	0.0385	0.0322	0.0305	0.0728	1.10E-05	0.0033	0.1004	0.9674
HSG	0.0704	0.0644	0.0520	0.0728	1.00E-06	0.0054	0.1984	0.6057
k_{sn}	0.2111	0.1735	0.1691	0.2250	4.40E-05	0.0155	0.5609	1.0000
k_{snP}	0.2117	0.1738	0.1694	0.2255	1.00E-05	0.0152	0.5641	1.0000
χ	0.0734	0.0696	0.0752	0.0752	8.00E-06	0.0052	0.2180	0.6878
χ_P	0.0744	0.0670	0.0498	0.0752	7.00E-06	0.0048	0.2077	0.6448

Total number of segments: 22,837

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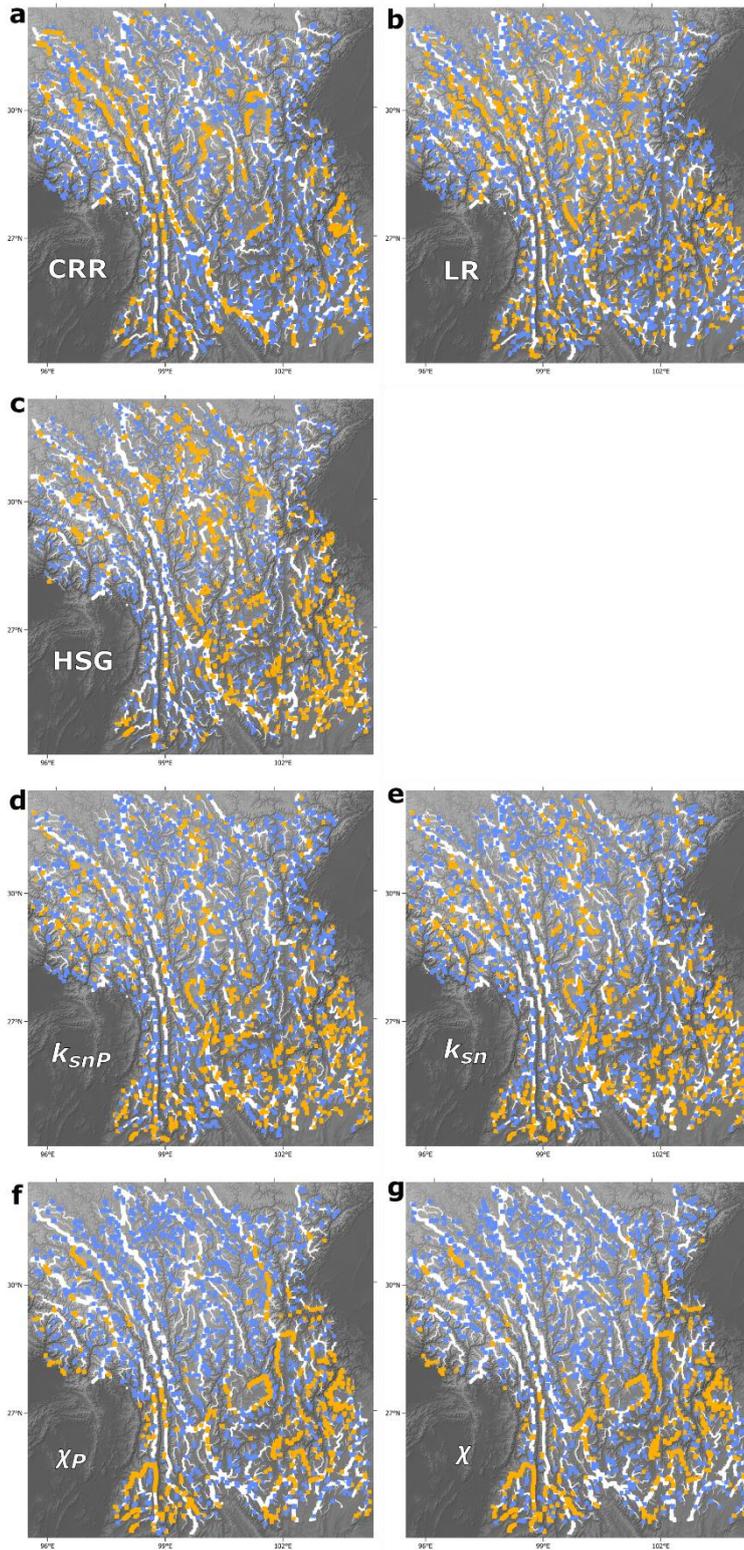
Figure S2. Elevation map with drainage divides, where divide line thickness increases with Strahler order (0-10). Panels include CRR, local relief (LR), HSG, k_{sn} with (k_{snP}) and without (k_{sn}) the precipitation correction, and χ with (χ_P) and without (χ) the precipitation correction. Orange marks the location of divides classed as highly asymmetric and blue marks divides with low symmetry based on the specified metric.
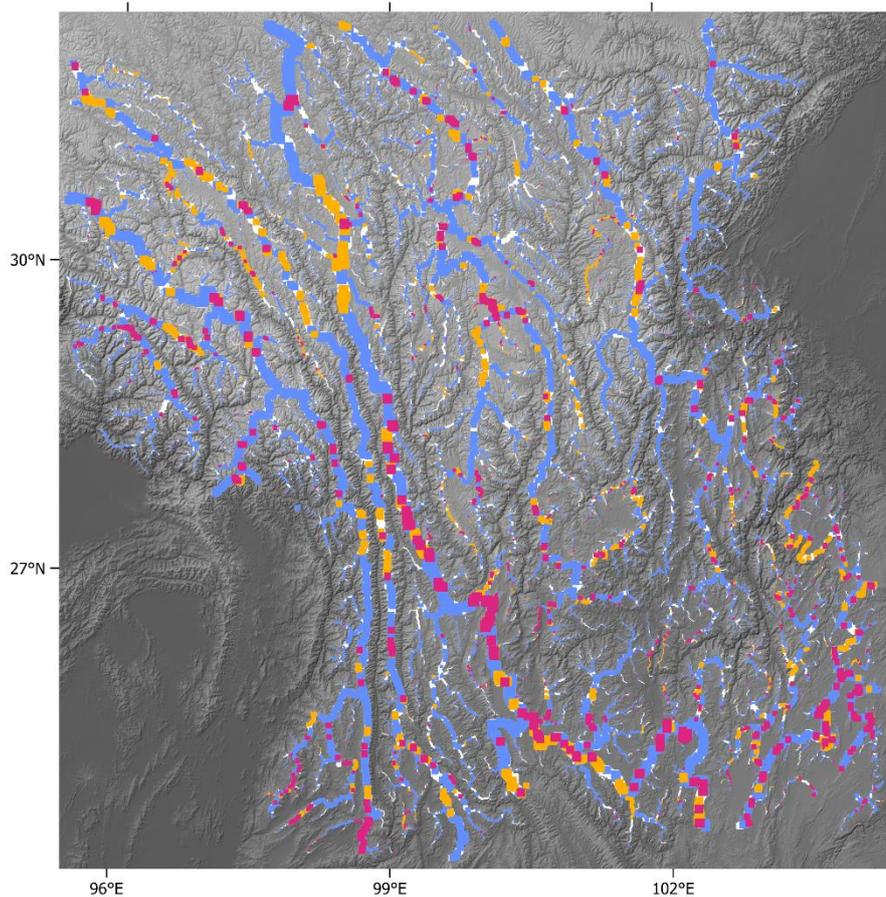
Figure S3. Elevation map with drainage divides, where divide line thickness increases by Strahler order (0-10). Orange divides are those which are classed as highly asymmetric in at least one of the local geomorphic metrics included in the main text (CRR, HSG, or k_{snP}). χ, χ_P, non-precipitation corrected k_{sn}, and local relief are excluded. Blue divides have low asymmetry in at least one of the local geomorphic metrics included in the main text. Pink divides have conflicting classifications—they qualify as having high asymmetry in at least one of the included metrics and low asymmetry in at least one other. Remaining divides are white.

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Table S2. Shows where highly asymmetric drainage divides are coincident with landscape features discussed in the main text. When divides with high asymmetry are only present over a portion of a catchment or basin drainage boundary, the orientation of those divides is given with a cardinal direction. "Some" means that highly asymmetric divides are present, but cover only a small portion of the area.

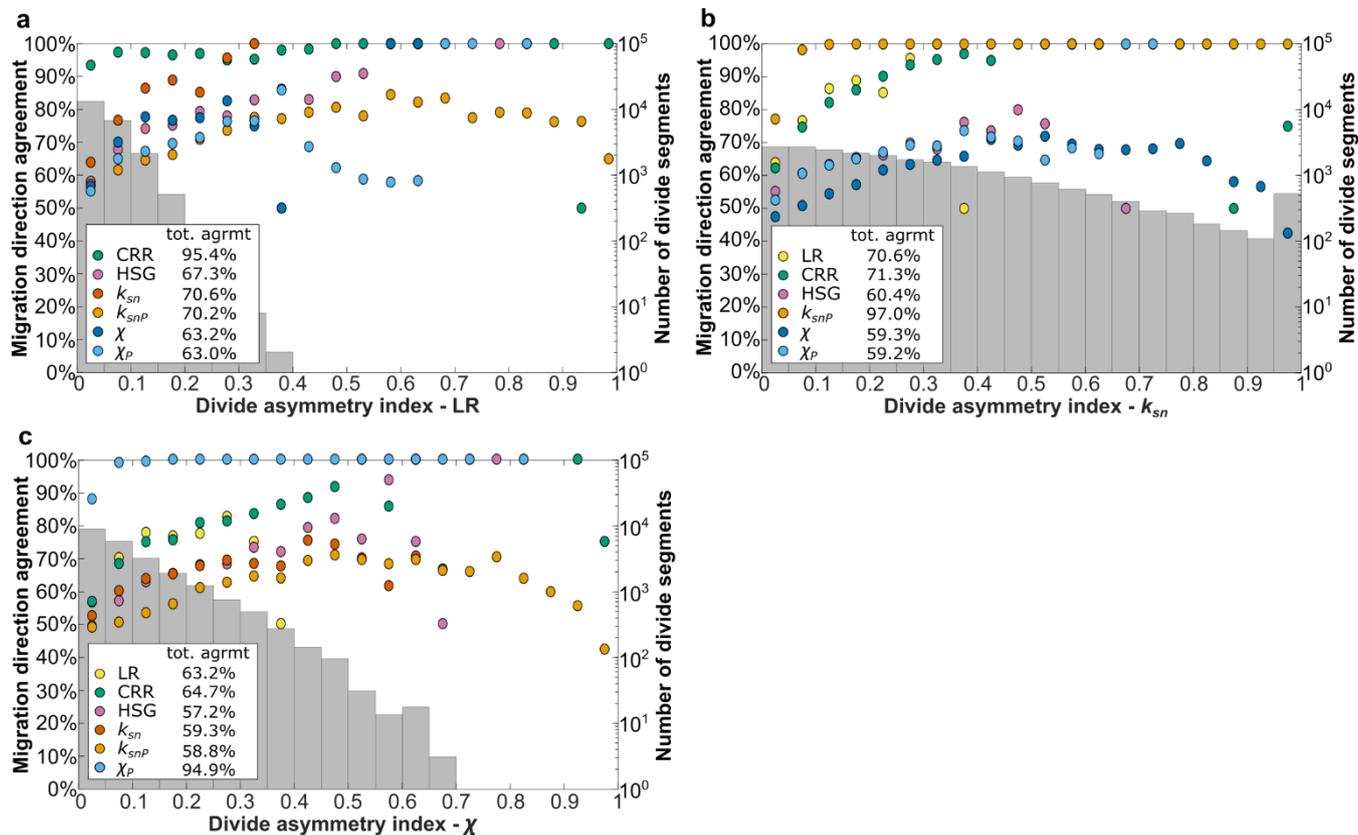
Feature	Highly Asymmetric Divides?						
	CRR	LR	HSG	k_{sn}	k_{snP}	χ	χ_P
Eastern Himalayan syntaxis	Yes	Some	Yes	Yes	Yes	Some	Yes
Three Rivers	Yes	Some	No	Some	Some	Yes	Yes
Daxue Shan	Yes	Yes	Some	No	No	Yes	Yes
Yuqu River	Yes	Yes	Yes	SW side	SW side	SW side	SW side
Liqui River	Yes	Yes	N & W sides	Some	Some	E side	E side
Li River	W side	N & W sides	S side	Yes	Yes	W side	W side
Yanyuan Basin	Yes	N side	N & S sides	NW side	NW & SE sides	Yes	Yes
Anning River	No	No	No	Some	Some	Yes	Yes
Upper Heng River	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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Figure S4. Plots of percent agreement in divide migration direction between LR (a), normalized channel steepness without precipitation correction (b), and χ without the precipitation correction and all calculated metrics (points), binned by corresponding divide asymmetry index (DAI) for indicated metric in intervals of 0.05. Grey histograms show the distributions of DAI values in log-scale for each metric. Higher DAI corresponds with increased agreement in migration direction between metrics. Histograms show

35 **variability in DAI distributions in different metrics.**