**Text S1** Patterns of FDis.

To evaluate the distributions of functional dispersion (FDis). We computed FDis for the 48 transects and the 18 alpine sites. We also conducted null models for FDis for the 18 alpine sites. The calculations and null models of FDis were conducted using same analysis tools and parameters as functional richness (FRic). Results showed that FDis have not increasing/decreasing tendency in vertical direction (ANOVA’s *P*=0.196; Fig. S2c). FDis did not correlate with species richness (Spearman’s *r*=0.126, *P*=0.620), nor FRic (Spearman’s *r*=0.292, *P*=0.239; Fig. S3). Null models showed that no sites have significant higher (*P*>0.975) or lower (*P*<0.025) FDis than null expectitions (Table S4). Ses.FRic did not correlate with ses.FDis (Spearman’s *r*=0.126, *P*=0.742).