



Supplement of

Duration of vegetation green-up response to snowmelt on the Tibetan Plateau

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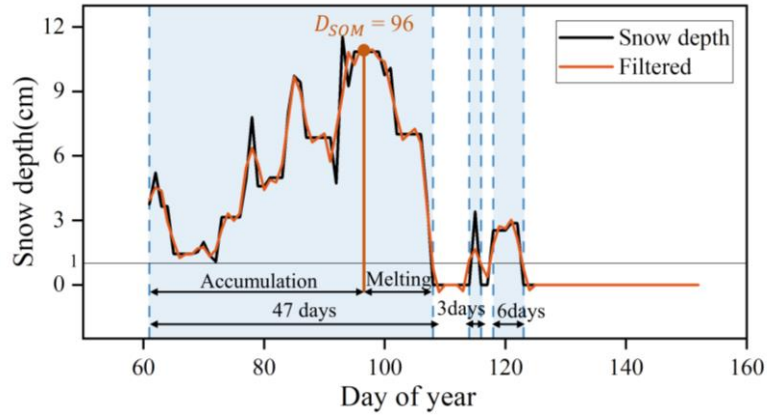


Figure S1: Diagram illustrating the identification of start of snowmelt (D_{SOM}). The snow depth is smoothed using Sacitzky-Golay filtering, represented by the orange line. Each continuous snowfall event is identified based on set criteria and highlighted with a blue background. The duration of each snow event, indicated by the number of days, is used to determine the longest snowfall process. The final identified D_{SOM} is marked by the orange point.

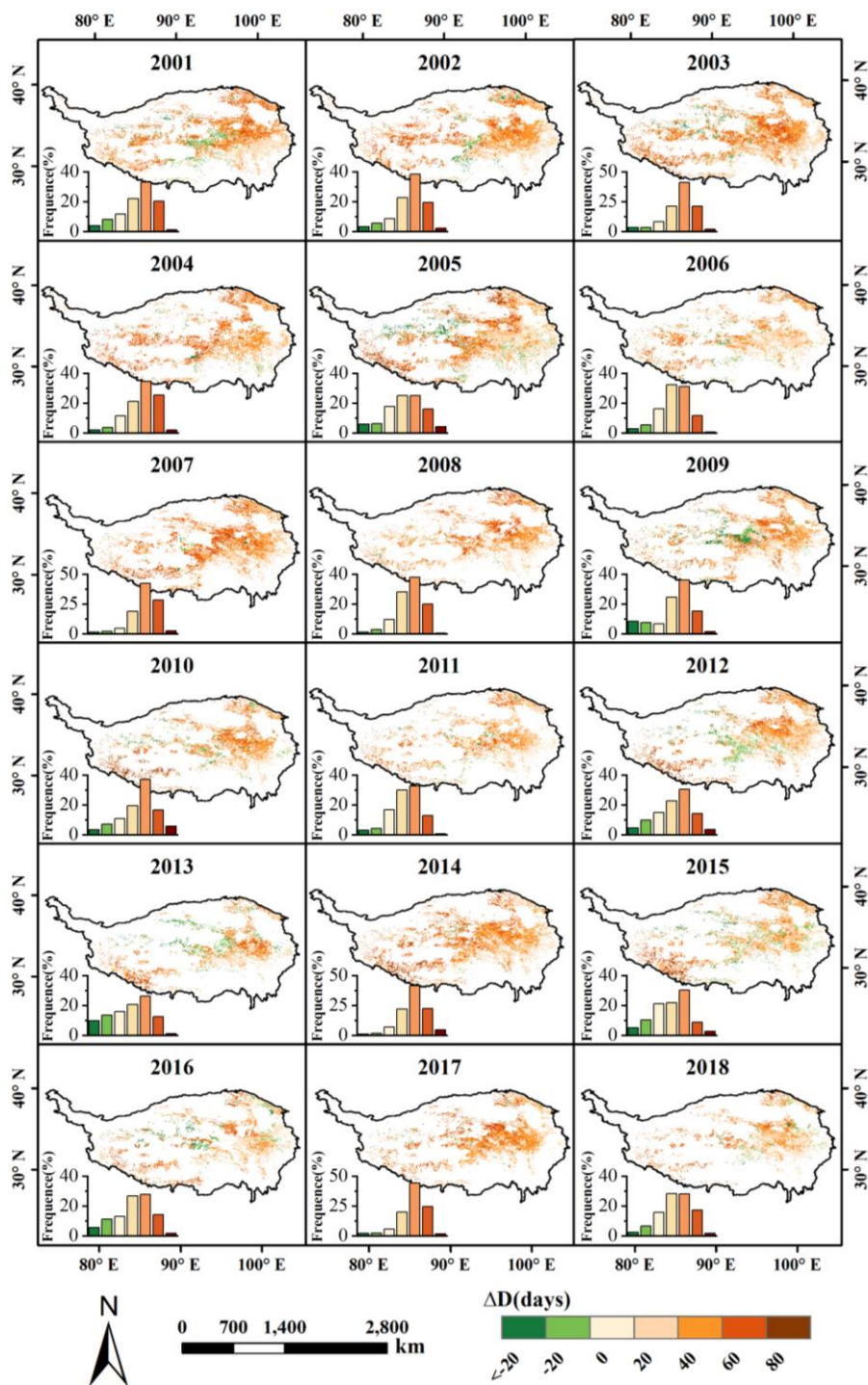


Figure S2: Spatial and frequency distribution histograms of ΔD on the Tibetan Plateau from 2001-2018.

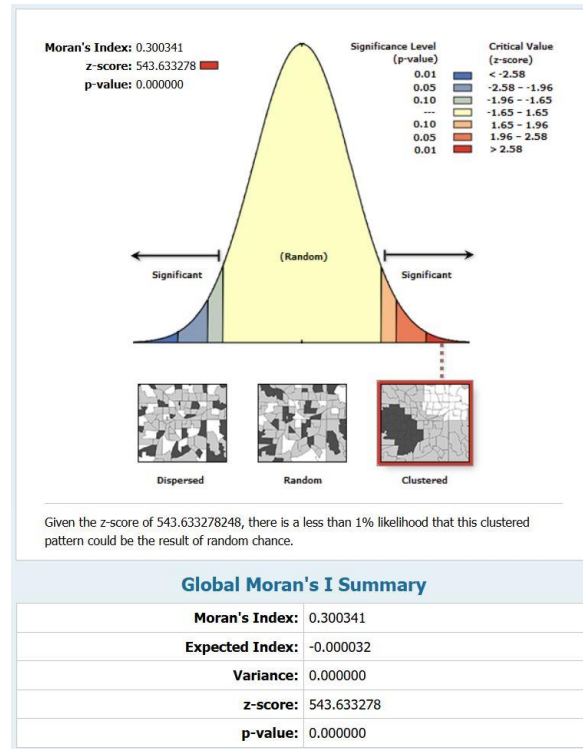


Figure S3: Report of the global Moran's I over 2001-2018 on the Tibetan Plateau

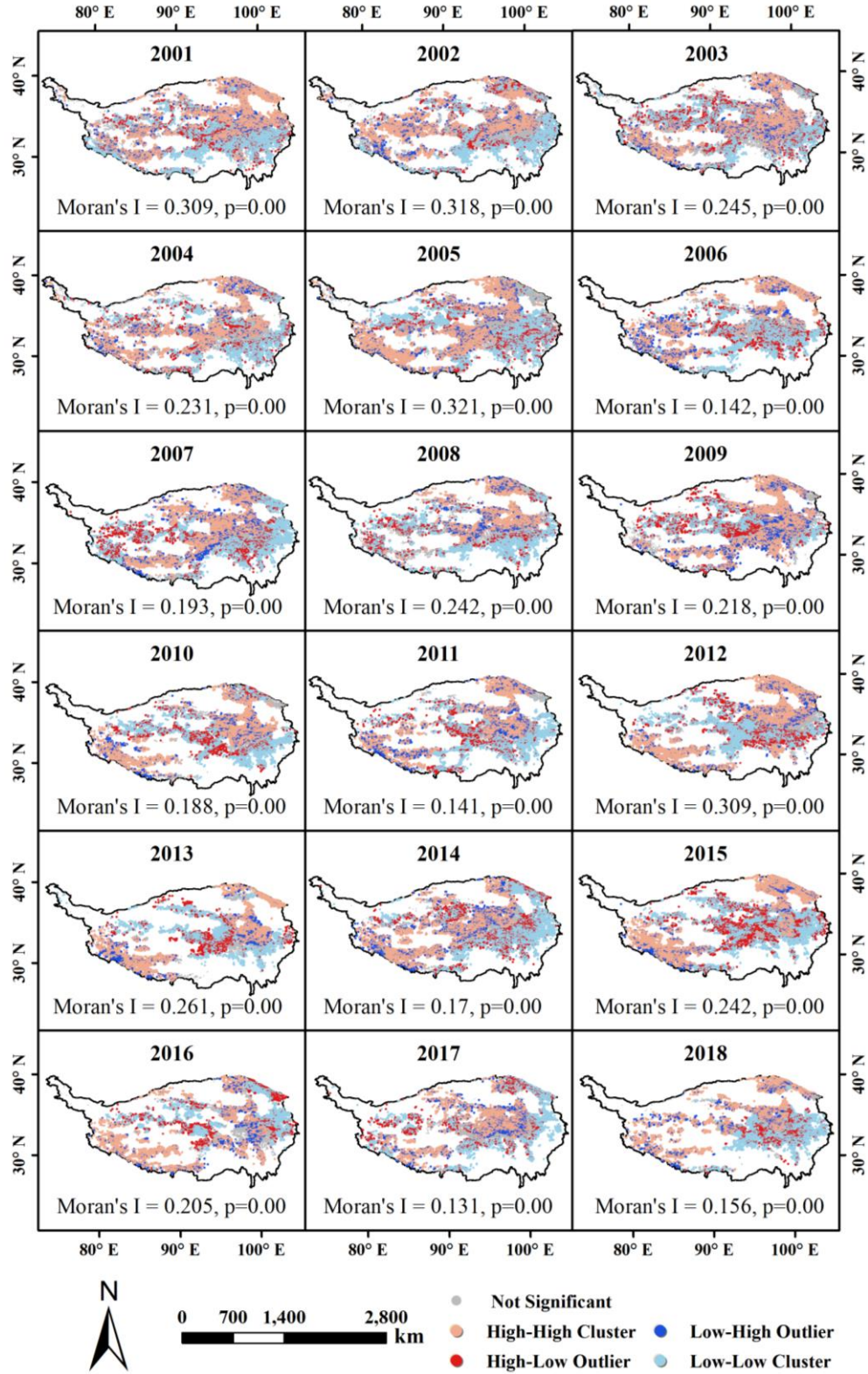


Figure S4: Global and local Moran's I values of ΔD from 2001-2018 on the Tibetan Plateau

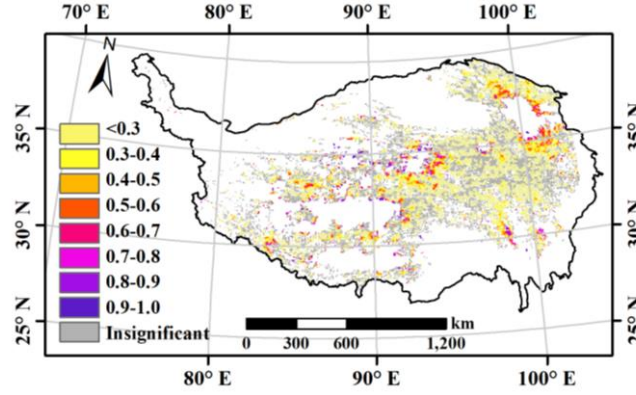


Figure S5: The fitting accuracy R^2 of linear regression model of ΔD for each pixel.

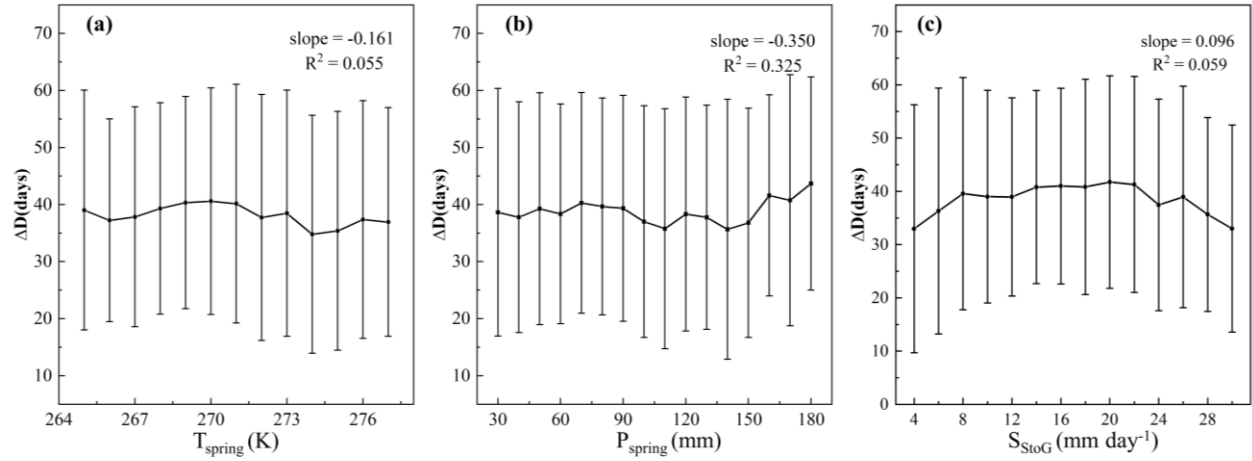


Figure S6: Variations in ΔD calculated from SOMHMA across regions with differing (a) spring mean temperature (T_{spring}), (b) spring total rainfall (P_{spring}), and (c) daily snowmelt from D_{SOM} to D_{GU} (S_{StoG}). Points represent the mean ΔD , while error bars denote one standard deviation. The slope and R^2 value reflect the coefficient and precision of the linear regression, respectively, with a significance level of 0.01.

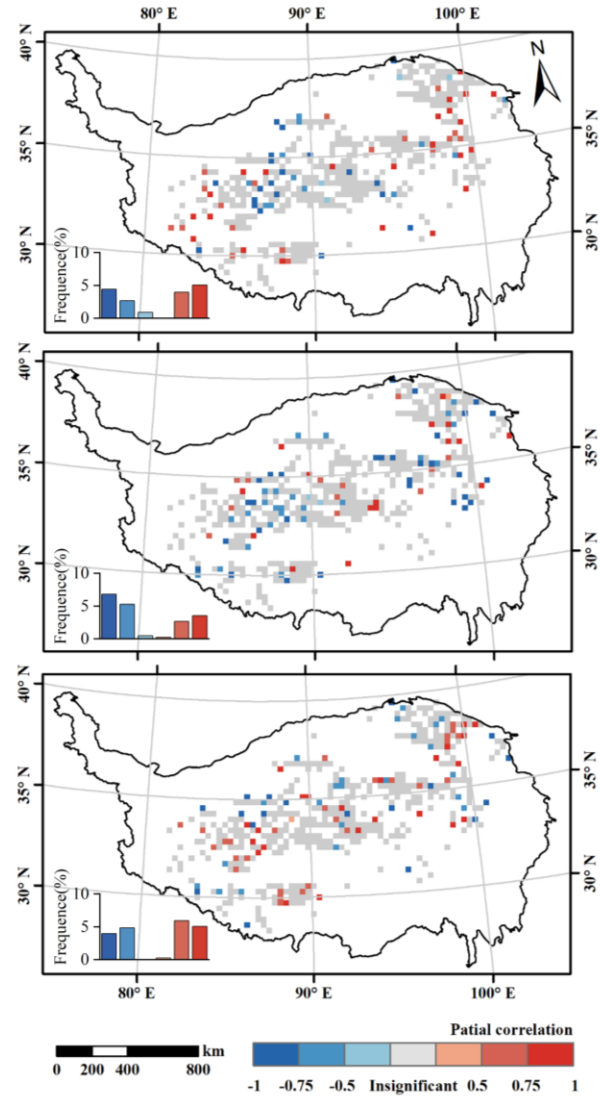


Figure S7: Spatial distribution of the partial correlation between ΔD calculated from SOMHMA and (a) spring mean temperature ($R_{\Delta D \& T_{spring}}$), (b) spring total rainfall ($R_{\Delta D \& P_{spring}}$), and (c) daily snowmelt from D_{SOM} to D_{GU} ($R_{\Delta D \& S_{toG}}$) with a significance level of 0.05.

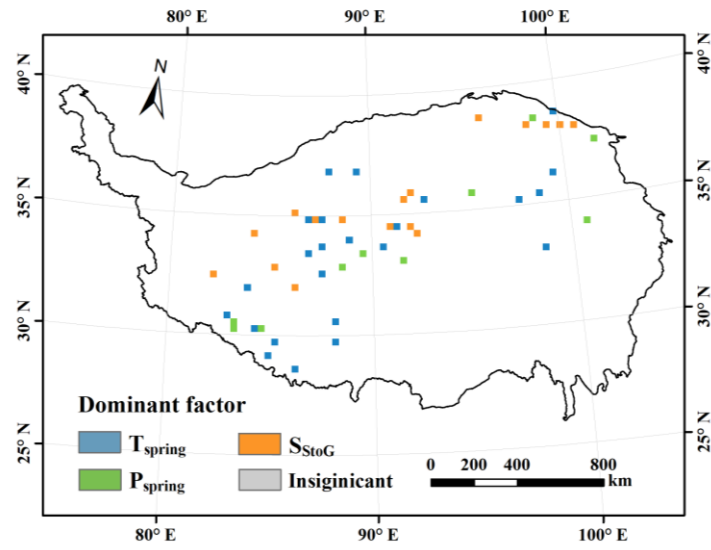


Figure S8: Spatial distribution of dominant factor of ΔD with a significance level of 0.05 calculated from SOMHMA