

Description of Additional Supplementary Files

File Name: Supplementary Data 1

Description: Atmospheric River (AR) catalog. List of all 574 AR events (based on main text (Equation 4) severity score) in the monsoon season in India. The ARs were identified using daily IVT derived from ERA5 reanalysis (see main text methods section for more details). This information can be used as a reference for further studies related to hydrological applications, agricultural impacts, and climate change and water resources management. Flood flag 1 indicates when the AR was associated with any flood event; whereas flood flag 0 represents when no AR was present during the period 1985-2020. The flood flag for the years before 1985 is not available and marked as NaN. The severity class as per Ralph et al., (2019) has also shown alongside