



## **The poleward tilt of storm tracks from a PV tendency analysis of cyclone tracking composites**

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Regions of enhanced eddy activity such as the Pacific and Atlantic storm tracks are characterized by a poleward deflection that influences significantly midlatitude climate. In this study, the poleward motion of storms is studied using a tracking algorithm in an idealized zonally symmetric GCM. The poleward propagation of mid-latitude cyclones and a possible 'baroclinic beta- drift' mechanism that explains the nonlinear meridional tendency are analyzed using a composite of all midlatitude cyclones. During the growth stage, the classic picture of baroclinic instability emerges, with an upper level potential vorticity (PV) to the west of a low level cyclone. This configuration not only promotes intensification, but also a poleward tendency that results from the nonlinear advection of the surface anomaly by the upper level PV. The separate contributions of each of the terms in the PV tendency equation shows the crucial role played by the upper level PV anomaly and the diabatic heating.