Some aspects of Rossby waves and non-linear dynamics

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Rossby waves are able to communicate weather anomalies in one region to other regions. There anomalous weather events can follow if the wave is persistent and large amplitude. They can also be caused by breaking of the wave leading to blocking. The impact on the middle latitudes via stationary Rossby wave trains triggered by tropical convection anomalies has been of interest for many years. However, tropical convective events can also interact with higher latitude jet streams and the weather systems on them through a very different mechanism. In this talk, some examples will be given that indicate the flaring of tropical convection can lead to strong upper tropospheric outflows in which filaments of air with near equatorial values of PV interact with higher latitude jet streams and the weather systems on them.