Geophysical Research Abstracts, Vol. 11, EGU2009-8532, 2009 EGU General Assembly 2009 © Author(s) 2009



Object-Based Analysis of Precipitation over Low- and Mid-Latitudes using satellite data

G. Skok (1), J. Tribbia (2), J. Rakovec (1), and B. Brown (2)

(1) Faculty of mathematics and physics, University of Ljubljana, Chair of Meteorology, Ljubljana, Slovenia (gregor.skok@fmf.uni-lj.si), (2) National center for Atmospheric Research, Boulder, Colorado

The object based methodology in forecast verification, being developed by Davis and collaborators, was upgraded to include the temporal behavior of objects and applied on a case of precipitation systems over equatorial Pacific. The analysis is performed on two satellite derived datasets and the model data; however in this paper only the results from the satellite data are presented. The method had shown that the largest and most long-lived precipitation systems in the tropical Pacific are typically located in the western part. A good ability in tracking precipitation systems in tropical Pacific was proved: movement of precipitation systems in the ITCZ is both westward and eastward although westward movement is more frequent and in the eastern part of the Pacific ITCZ the westward movement is even clearly dominant. Movement of systems in the mid latitudes was predominantly eastward. These findings were common to both satellite products, despite the fact that the accumulation of rainfall in areas of intense rainfall can differ by 20% -30%. The number of systems vs. lifespan distribution can be represented reasonably well by a power law – in contrast to exponential distribution which would be produced by randomly generated precipitation; a result caused by the non-random component of the precipitation dynamics.