



## Warm season convective precipitation climatology over Europe and Africa

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A thorough understanding of convective rainfall mechanisms is far from being completely achieved, especially as regards to large scale forcing, wind shear at low and mid-levels, interactions with the PBL structure, and orographic enhancement. This lack of knowledge has significant impact on the skill scores of numerical weather predictions of warm season rainfall.

The space-time coverage of satellite and radar observations of precipitating systems is currently being exploited to expand our notions on the lifecycles of convective precipitating systems. Warm season studies have recently found coherent patterns of propagation of organized convection in the continental United States (Carbone et al. 2002) and East Asia (Wang et al. 2004). Studies have been started over Africa, Europe, Australia, and Central and South America.

Results are presented of a study on a 5-year dataset (1999-2003) of Meteosat IR imagery over Europe and Africa. Hovmöller diagrams are applied on a series of domains to identify cold cloud systems and their propagation based on a threshold technique. Diurnal and seasonal patterns are examined with particular interest in the orographic influence. Comparisons with results from other continents are provided.

Carbone, R. E., J. D. Tuttle, D. A. Ahijevych, and S. B. Trier, 2002: Inferences of predictability associated with warm season precipitation episodes. *J. Atmos. Sci.*, **59**, 2033-2056.

Wang, C.-C., G. T.-J. Chen, and R. E. Carbone, 2004: A climatology of warm-season cloud patterns over East Asia based on GMS infrared brightness temperature observations. *Mon. Wea. Rev.*, **132**, 1606-1629.