Geophysical Research Abstracts
Vol. 14, EGU2012-7020, 2012
EGU General Assembly 2012


# Impact of Increased Resolution and Process-resolving on Forecast Skill of Extreme Events

E. Jin
Republic Of Korea (k.jin@kiaps.org)

Using dedicated high-end computing support, the numerical experiments were conducted with two state [U+2010] of [U+2010] the [U+2010] art global atmospheric models run at the highest possible resolutions. The Non [U+2010] hydrostatic ICosahedral Atmospheric Model (NICAM) global cloud-system resolving atmospheric model was run at 7 [U+2010] km grid resolution to simulate the boreal summer climate during 2001-2009. Experimental 10 [U+2010] km (T2047), 16 [U+2010] km (T1279) and operational 40-km (T511), 128-km (T159) versions of the ECMWF Integrated Forecast System (IFS), a global atmospheric general circulation model, which is used daily to produce 10 [U+2010] day weather forecasts, were run on multi-year timescales. The boreal summer cases of T2047 IFS during 2001-2009 and the 13-month hindcast experiments of lower resolutions during 1960-2008 were conducted. Based on these experiments, the impact of resolution and cloud resolving on the forecast skill of extreme events associated with Asian-Australian monsoon system including Chang-Ma was analyzed. The analysis focuses on the extreme of summertime rainfall and circulations. The different components and subsystems of the A–AM circulations in a variety of time scales are considered. The impact of initial condition and ensemble size was assessed. The reproducibility and the primary driving mechanisms were investigated.