Name: Frederic Vitart
Frederic.vitart@ecmwf.int
ECMWF
Shinfield Park
RG92AX
Reading
Country: United kingdom
Title: Impact of resolution on sub-seasonal skill scores
Additional authors: Franco Molteni, Ben Cash
Additional Affiliations: ECMWF,COLA
Abstract:
 During the project MINERVA, a collaboration between the Center for Ocean-Land-Atmosphere Studies (COLA) and the European Centre for Medium-Range Weather Forecasts (ECMWF), the ECMWF coupled prediction system has been integrated for 7 months with three different horizontal resolutions (about 60 km, 30 km and 16 km). The initial dates are 1st May or November with either 51 or 15 ensemble members. The skill of the model integrations to predict weekly mean anomalies of 2-metre temperature and precipitation has been evaluated, along with their skill to predict the Madden Julian Oscillation and the North Atlantic Oscillation indices. Results suggest that increasing the horizontal resolution from 60 km to 30 km leads to improved sub-seasonal skill scores, stronger MJO and improved NAO forecasts in week 2 and month2. The biases in precipitation are also reduced when increasing the resolution to 30 kms. Increasing the resolution from 30 to 16 km did not lead to significant improvements in the sub-seasonal forecast skill scores. This result, however, needs to be confirmed on larger sample. The impact of ensemble size on the sub-seasonal forecast skill scores will also be discussed.
End