



An intensity-scale skill score to assess the added value of enhanced resolution

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The Canadian Global Environmental Multiscale (GEM) model run in the Limited Area Model (LAM) configuration with a grid-spacing of 2.5 km produces precipitation forecast fields enriched of realistic small-scale details, as compared to the fields produced by the driving 15 km GEM-LAM integration, or compared to the fields produced by the parent 33 km GEM model (from which the higher resolution runs are downscaled). Traditional verification approaches do not reward the enhanced resolution of the GEM-LAM at 2.5 km, possibly due to the increased variability and small timing and location displacements. In this work we present a variation of the intensity-scale skill score, specifically defined to compare the performance of high resolution versus coarser resolution precipitation forecasts. The skill score is illustrated on the MesoVIC case studies, for the precipitation forecasts produced by the GEM-LAM at 2.5 km, the GEM-LAM at 15 km, and the GEM model at 33 km resolution.