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Exploring MLT momentum fluxes and horizontal wind gradients over the Andes at four different latitudinal sectors using multistatic configurations

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The middle atmosphere over the southern Andes is known as one of the most dynamically active regions in the world. Previous studies have investigated wave dynamics at mesosphere and lower thermosphere (MLT) altitudes within this region, but only a handful of them have made use of continuous measurements provided by specular meteor radars (SMRs). Furthermore, it was only until recently that MLT horizontal wind gradients were estimated for the first time using a multistatic SMR network located in southern Patagonia. By observing larger amounts of meteors from different viewing angles, multistatic SMRs allow estimating not only more reliable momentum fluxes, but also parameters such as relative vorticity. In this work, we explore and compare MLT wave dynamics at low and middle latitudes around the Andes Mountain range. For this purpose, we investigate mean momentum fluxes and horizontal wind gradients obtained using four multistatic SMR networks: SIMONE Peru (12° S), CONDOR (30° S), SIMONE Argentina (50° S) and MMARIA-SAAMER (54° S).