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Atmospheric waves over Abastumani observed by a new hydroxyl infrared all-sky imager

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Continuous night-time observations by a new infrared hydroxyl all-sky imager system started from Abastumani (41.75 N; 42.82 S) in September 2014. The images cover a large ∼350x300 km horizontal area of the mesopause region above the south Caucasus Region. This area encompasses some regions above the Black Sea, and the small and large Caucasus Mountains. Preliminary results show the importance of such monitoring for the investigation of the lower and upper atmosphere coupling processes, the detection of planetary scale motions and the possible role of orographic forcing.
During the first months of observation a large variety of atmospheric phenomena were observed, including short-period atmospheric gravity waves (AGWs) with periods mostly between 8 and 15 min, but also longer periods up to ∼1hr, localized instabilities (ripples), non-linear phenomena like AGWs breaking, fronts, and distinct tidal motions (6hr and 8hr periodicity), showing the diversity of the dynamical processes occurring in the upper atmosphere over this region of the globe.