



Atmospheric dynamics from near ground to near Earth space: The ARISE project

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The atmosphere between near ground and near Earth space is a highly variable environment at seasonal and sub-seasonal time scales. This variability influences the general atmospheric circulation through the propagation and breaking of planetary and gravity waves. Multi-instrument measurements by infrasound technology, lidars, radars and satellites are performed in the framework of the ARISE (Atmospheric dynamics Research InfraStructure in Europe) project, to determine the origin of uncertainties in Numerical Weather Prediction (NWP) models such as the one of the European Centre for Medium-Range Weather Forecasts (ECMWF). A better description of the atmospheric variability constitutes a challenge for the development of the future models. The large scales of some observed disturbances suggest a strong coupling between the atmospheric layers and the ionosphere at higher altitude which needs to be better determined. The role of such disturbances in the atmospheric and ionospheric dynamics as studied in the framework of the project will be reviewed as well as the future ARISE objectives related to weather, climate and natural hazards for civil security.