



Study of frontal and convective intense precipitation cases in 2012 with GNSS tropospheric products and NWP model WRF for Bulgaria

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In this work water vapour derived from GNSS and the NWP model WRF is used to study intense precipitation associated with isolated convective cells and frontal passages in Bulgaria. Two dimensional Integrated Water Vapour (IWV) maps are produced using the GNSS networks in Bulgaria and Greece. In one case it is found that development of isolated convective cell is associated with large gradient in IWV. The large IWV gradients are found to favour convection development. The air mass transition for frontal cases is well captured in the IWV data. The NWP model WRF is found to overestimate the IWV during the convective cases. This is likely associated with the used convective parametrisation scheme. Further simulations will be required to draw conclusions on model performance.