

## Monitoring Prolonged Fog in January 2014 at Sofia with Sofia Stability Index And GNSS Tropospheric Products

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**Abstract.** In this work we study fog formation, development and dissipation in Bulgaria by using surface synoptic observations and vertically Integrated Water Vapour (IWV) derived from Global Navigation Satellite Systems (GNSS). Selected is a case at Sofia, Bulgaria in January 2014 when a prolonged fog is observed between 3 and 10 January. The fog is separated in two parts - first with mainly radiation processes (I part) and second with mainly warm advection at the altitude (II part). For both parts the Sofia Stability Index (SSI) is computed using surface observation at 600 and 2300 m asl. The index gives additional information about the development and the dissipation of inversion layer, which is of particular interest during the long duration event. IWV is derived from two GNSS stations at 600 and 1120 m asl and the dependence between diurnal IWV cycle and fog formation/dissipation is studied.