

EXTREME WEATHER MONITORING BASED ON GNSS RADIO OCCULTATION SOUNDING - A CASE STUDY IN CHINA

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Extreme weather events due to the climate changing (e.g. snow storms in UK and USA, flooding in Indonesia and drought and torrential rain in China occurred almost concurrently) have disastrous impacts on environment, society and economy worldwide. However, monitoring and prediction of these extreme weather events have been challenging tasks due to limited atmospheric information from conventional meteorological observation systems. Due to unprecedented high vertical resolution, high accuracy, global coverage and long-term stability, the Global Navigation Satellite System (GNSS) radio occultation (RO) technique has a great potential to complement other meteorological observation systems and improve extreme weather monitoring and forecasting. This research investigates a method of extreme weather monitoring using GNSS RO sounding. The profiles from COSMIC GNSS RO mission will be used to investigate the drought and torrential rain in the southwest and the south of China, respectively, in 2010. The results demonstrate the great potential of GNSS RO technique to extreme weather events monitoring.