



The investigation of using 5G millimeter-wave communications links for environmental monitoring

Congzheng Han

Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China (c.han@mail.iap.ac.cn)

There has been significantly increasing recognition that millimeter waves from 30 GHz to 300 GHz as carriers for future 5G cellular networks. This is good for high speed, line-of-sight communication, potentially using very densely deployed infrastructure involving many small cells. High resolution, continuous and accurate monitoring of environmental conditions, such as rainfall and water vapor are of great important to meteorology, hydrology (e.g. flood warning), agriculture, environmental policy (e.g. pollution regulation) and weather forecasting. We have built a 28GHz measurement link at our research institute in central Beijing, China. This work will study the potential of using millimeter wave based wireless links to monitor environmental conditions including rainfall and water vapor.