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Atmospheric impairments on satellite signal in the Middle-East: Characterization and analysis – Case study

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Recent expansions of satellite communication services in the Middle-East have increased the demand for satellite channel characterization and modeling. Nevertheless, the weather dynamics impairment on the earth–sky signal quality in that region at frequencies above 10 GHz has led to major impacts on the satellite signal quality. This study presents the channel analysis and characteristics based on rain impairment on satellite communication channel in Iraq, as a case study, using actual measured rainfall. The study enhances the identification of the type and performance of the fade mitigation technique, the management of available communication resources, as well as the reliability and efficiency of the communication services. Moreover, the study returns public benefits to the future studies about satellite performance in the Middle-East in general, particularly in Iraq.

Biography

Ali M Al-Saegh completed his BSc and MSc in Electronic and Communications Engineering at Nahrain University, Iraq in 2005 and 2008, respectively, and PhD in Wireless Communications Engineering in Computer and Communication System Engineering department at Universiti Putra Malaysia (UPM), Malaysia, in 2015. From 2009 to 2012, he was a Lecturer in Computer Engineering Techniques and Communications Engineering department at Al-Mamon University College, Iraq. From 2012 to 2013, he was a Research Assistant in Department of Computer and Communication Systems Engineering, UPM, Malaysia. Since 2015, he has been a Senior Lecturer of Computer Engineering Techniques at Al-Mamon University College, Iraq. He is a Reviewer of many journals and conferences, and member of several groups and associations including satellite communications group at UPM, Malaysia, and several IEEE societies and communities.

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