

# Study of MEO Under Different Weather Conditions

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## Introduction

Satellite signals get affected by attenuation caused by the different weather conditions such as rain, moisture, snow, sand, and dust storm. The satellite broadcast attenuation is related directly to the condition of the weather. This poster summarizes the study of the Medium Earth Orbit (MEO) satellite under different weather conditions.

## MEO Advantage

- A MEO satellite's longer duration of visibility and wider footprint means fewer satellites are needed in a MEO network than a LEO network.
- Less latency and delay than GEO (but greater than LEO)
- Improved look angle to ground receivers
- Improved opportunity for frequency re-use as compared to GEO (but less than LEO)
- Longer in-orbit lifetime than LEO systems

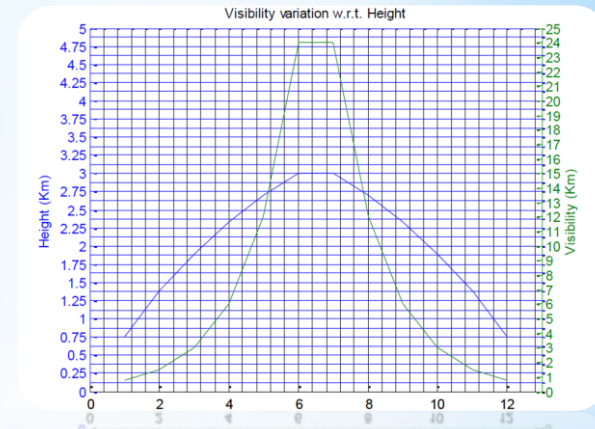
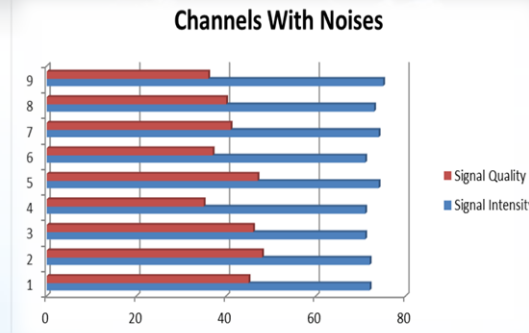
## MEO Applications

- Interactive Conversational Voice and Video Conferencing
- Enterprise Resource Planning and Distributed C2 Systems
- Impact of High Latency on File Transfer and Web-based C2 Applications
- Microwave Radiometer

## MEO Figure



## MATLAB Simulations



## Conclusion

This poster summarized the study of the Medium Earth Orbit (MEO) satellite under different weather conditions. Implementation of measurements on MATLAB helps to get the most of satellite communication under weather circumstances.

## References

- [1] Owais, M. Satellite Communications. , 29. Retrieved , from <http://mowais.seecs.nust.edu.pk/Satellite%20Comm-LecIV.pdf>
- [2] Kamal Harb, B. Omair, Abdulaziz Al-Yami, and Samir H. Abdul-Jauwad, "Probabilistic Dust Storm Layers Impacting Satellite Communications", Proc. of the IEEE International Conference on Space Science and Communication (IconSpace 2013), Malacca, Malaysia, pp. 407-411, July 2013