

ERA5 CLIMATIC REANALYSIS: A REVIEW ON ITS USE FOR CALCULATING ATMOSPHERIC ATTENUATION FOR SATELLITE COMMUNICATION SYSTEMS

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ABSTRACT

Meteorological parameters extracted from climatic reanalysis are used as input data in global prediction models developed by the International Telecommunications Union, aimed to analyze and quantify attenuation occurring in satellite communication systems, caused by the atmosphere and its natural constituents. In the present paper, a review of ERA5, the most recent reanalysis from the *European Centre for Medium-Range Weather Forecasts*, and its main characteristics is presented, including the different type of available data as well as practical examples of how to download them from the servers. Once a series of parameters having interest in radiopropagation are identified, a summary on models and procedures that could allow estimating atmospheric attenuation caused by gasses, clouds, and rain is provided.

Keywords: Atmospheric Propagation, Satellite Communications, Radiowave Propagation, ERA5 Reanalysis.

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