Short Communication
Volume 12:3, 2023

Telecommunication System and Management

ISSN: 2167-0919 **Open Access**

The Negative Effects of the Corona Effect on the Propagation of Radio and TV Waves

Avni kumar*

Department of Engineering, JSS University of Pharmacy, Karnataka, India

Abstract

Due to the ever-increasing demands placed on the quality of reception of radio and TV waves, and that these demands are manifested by a considerable number of complaints against obstacles, especially in those countries that have a highly developed radio-television network, the factors that can reduce the efficiency of reception of transmissions, for example: radio broadcasting and the efficiency of many other services, attract more and more attention. High-voltage power lines cause significant high-frequency radio-television obstacles, therefore, the current and future high-voltage lines that are planned to be built will require better choices to be taken into account during design (alternative) in such a way that the problem of obstacles is reduced. Weather deterioration (rain, humidity) significantly increases the electrical discharges and in this case the interference field also increases, which negatively affects the propagation of radio and TV waves. The corona effect as a phenomenon intensifies especially in cases of bad meteorological conditions, in this case, in addition to the noise in the vicinity of the airline where the corona effect occurs, the smell of ozone can also be felt, then the electromagnetic waves that prevent the reception of radio and TV signals appear. As you can see, the corona has harmful consequences, so it is undesirable in the work of air lines, especially in high voltage ones. The purpose of this scientific research is to analyze the negative effects of the corona effect on the propagation of radio and TV waves and the possibility of limiting or reducing these negative effects.

Keywords: Radio • TV waves • Corona discharges • Noise • Obstacles • Critical field • Critical voltage

Introduction

The corona effect is a phenomenon that occurs when high-voltage electricity passes through air. This can happen in a number of different situations, including lightning, electric arcs, and corona discharge. When the corona effect occurs, it can produce a number of negative effects, including interference with radio and TV signals. The corona effect can cause interference with radio and TV signals in a number of ways. First, it can cause the signals to be attenuated, or weakened. This is because the corona effect can create a layer of ionized air around the source of the electricity. This ionized air can absorb radio and TV waves, making them weaker. Second, the corona effect can cause the signals to be distorted. This is because the corona effect can create a number of different frequencies of radio and TV waves. These different frequencies can interfere with each other, making the signals difficult to understand. Third, the corona effect can cause the signals to be blocked. This is because the corona effect can create a strong electric field around the source of the electricity. This electric field can block radio and TV waves from passing through it [1].

Description

The corona effect is a phenomenon that occurs when high-voltage electricity passes through air. This can happen in a number of different situations, including lightning, electric arcs, and corona discharge. When the corona effect occurs, it can produce a number of negative effects, including interference with radio and TV signals. One of the most common ways that the corona effect can interfere with radio and TV signals is by causing them to be attenuated, or weakened. This is because the corona effect can create a layer of ionized air around the source of the electricity. This ionized air can absorb radio and TV waves, making them weaker. Another way that the corona effect can interfere with radio and TV signals is by causing them to be distorted. This is because the corona effect can create a number of different frequencies of radio and TV waves. These different frequencies can interfere with each other, making the signals difficult to understand [2].

Finally, the corona effect can also cause radio and TV signals to be blocked. This is because the corona effect can create a strong electric field around the source of the electricity. This electric field can block radio and TV waves from passing through it. The severity of the negative effects of the corona effect on radio and TV signals will depend on a number of factors, including the strength of the electric field, the distance from the source of the electricity, and the frequency of the radio or TV signal. For example, the corona effect is more likely to cause interference with radio and TV signals at high voltages and close to the source of the electricity. It is also more likely to cause interference with lower frequency radio and TV signals. There are a number of things that can be done to reduce the negative effects of the corona effect on radio and TV signals. These includes like Using higher frequencies, using directional antennas and using shielding. By taking these steps, it is possible to reduce the negative effects of the corona effect on the propagation of radio and TV signals [3].

In addition to the negative effects on radio and TV signals, the corona effect can also have a number of other negative effects, like Increased noise levels: The corona effect can cause increased noise levels in the surrounding area. This noise can be a nuisance and can also interfere with other electronic devices. Damage to electrical equipment: The corona effect can cause damage to electrical equipment, such as power lines and transformers. This damage can lead to outages and other disruptions [4]. Some health hazards problems are mainly the corona effect can produce ozone, which is a harmful gas. Ozone can cause respiratory problems, such as asthma and bronchitis. It can also damage plants and animals.The corona effect is a serious problem that can have a number of negative effects. It is important to be aware of the corona effect and to take steps to reduce its negative effects [5].

Conclusion

The corona effect can have a number of negative effects on the propagation

***Address for Correspondence:** Avni kumar, Department of Engineering, JSS University of Pharmacy, Karnataka, India, E-mail: avnikumar54@gmail.com*

Received: 01 May, 2023, Manuscript No. jtsm-23-104252; **Editor assigned:** 03 May, 2023, PreQC No. P-104252; **Reviewed:** 15 May, 2023, QC No. Q-104252; **Revised:** 22 May, 2023, Manuscript No. R-104252; **Published:** 29 May, 2023, DOI: 10.37421/2167-0919.2023.12.381

of radio and TV signals. These effects can include attenuation, distortion, and blocking. The severity of these effects will depend on a number of factors, including the strength of the electric field, the distance from the source of the electricity, and the frequency of the radio or TV signal. There are a number of things that can be done to reduce the negative effects of the corona effect on radio and TV signals. These are like higher frequencies are less likely to be attenuated or distorted by the corona effect, directional antennas can help to reduce the amount of interference from the corona effect and Shielding can help to protect radio and TV receivers from the effects of the corona effect. By taking these steps, it is possible to reduce the negative effects of the corona effect on the propagation of radio and TV signals.

Acknowledgement

None.

Conflict of Interest

None.

References

1. Alidemaj, Avni and Ines Bula. "The negative effects of the corona effect on the propagation of radio and TV waves." *IFAC-Papers Online* 55 (2022): 342-345.
2. Bousiou, Evanthia I., Pantelis N. Mikropoulos and Vasileios N. Zagkanas. "Corona inception field of typical overhead line conductors under variable atmospheric conditions." *Electr Power Syst Res* 178 (2020): 106032.
3. Donini, Alberto, Roberto Spezie, Rosario Cortina and Edoardo Alessio Piana, et al. "Accurate prediction of the corona noise produced by overhead transmission lines." In 2016 AEIT International Annual Conference *(2016)*: 1-6.
4. Indulkar, C. S. "Sensitivity Analysis of Corona and Radio Noise in EHV Transmission Lines." *J Inst Eng India Part El Electrical Engineering Division* 84 (2004): 197-200.
5. Mikropoulos, P. N. and V. N. Zagkanas. "Threshold inception conditions for positive DC corona in the coaxial cylindrical electrode arrangement under variable atmospheric conditions." *IEEE Trans Dielectr Electr Insul* 22 (2015): 278-286.

How to cite this article: kumar, Avni. “The Negative Effects of the Corona Effect on the Propagation of Radio and TV Waves.” *Telecommun Syst Manage* 12 (2023): 381.