# Article information:

Measuring resolution degradation of long-wavelength infrared imagery in fog
<https://gfbicebf261fac16c40d5sxwcn9vpx5pbw6fbqfiac.eds.tju.edu.cn/journals/optical-engineering/volume-58/issue-05/051806/Measuring-resolution-degradation-of-long-wavelength-infrared-imagery-in-fog/10.1117/1.OE.58.5.051806.full?SSO=1>

# Article summary:

1. Fog is a major problem for transportation and security, and digital imaging systems can help to overcome the challenges of seeing in fog.

2. This paper presents experimental results that quantify how scattering from fog reduces the number of collected photons and resolution of LWIR imagery.

3. The experiment consisted of an LWIR camera and a blackbody target in a fog chamber to measure image degradation, and parameters such as MOR, LWC, and droplet concentration were used to characterize the fog.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article provides an overview of how long-wavelength infrared (LWIR) imagery is degraded by fog, with experimental results that quantify how scattering from fog reduces the number of collected photons and resolution of LWIR imagery. The experiment consists of an LWIR camera and a blackbody target in a fog chamber to measure image degradation, with parameters such as MOR, LWC, and droplet concentration used to characterize the fog.

The article is generally reliable in its presentation of information on measuring resolution degradation of long-wavelength infrared imagery in fog. It provides detailed descriptions on the experiment setup, including the use of an FLIR® Tau™ 2 microbolometer viewing a slant edge target set 16.8 m away from an LWIR camera housed in a positive pressure dry box placed directly in the fog chamber; characterization methods such as Spraytec™ laser diffraction particle sizer from Malvern Instruments®, an inhouse transmissometer; meteorological optical range (MOR); liquid water content (LWC); droplet concentration (Nd); Beer–Lambert law; modulation transfer function (MTF); etc.; as well as previous work related to this topic.

However, there are some potential biases present in this article which should be noted when considering its trustworthiness and reliability. Firstly, it does not provide any counterarguments or explore any unexplored points regarding measuring resolution degradation of long-wavelength infrared imagery in fog - it only presents one side of the argument without exploring any other possibilities or perspectives on this issue. Secondly, it does not mention any possible risks associated with using digital imaging systems for seeing through fog - this could be seen as promotional content which may lead readers to believe that these systems are completely safe without considering any potential risks involved with their use. Finally, it does not present both sides equally - while it provides detailed descriptions on the experiment setup and characterization methods used for measuring resolution degradation of long-wavelength

# Topics for further research:

* Digital imaging systems risks
* Fog imaging counterarguments
* Unexplored points in fog imaging
* Beer–Lambert law applications
* Modulation transfer function applications
* Digital imaging systems safety

# Report location:

<https://www.fullpicture.app/item/53118b3646f4639f76082e304f8087d3>