December 5, 2025

Association of Certified Meteorologists (ACM) Statement on the Use of Artificial Intelligence and Machine Learning in Consulting Work Products

Intended Audience

Legal Professionals; Scientific Expert Witnesses; Risk Professionals; Meteorology Consultants

The Issue

Artificial intelligence (AI), including Machine Learning (ML), are common tools in scientific research and modelling, including in the profession of meteorology. While AI and ML may have incredible benefits to some facets of science – particularly meteorology – a hard line must be drawn in the framework of meteorology consulting and expert witness opinions to support the integrity of human meteorological expertise. In courts of law, presented meteorological information and opinions should conform to standards set forth regarding rules of evidence provided by expert witnesses.

Particularly, many courts of law have traditionally accepted meteorological evidence that is neither the opinion of a meteorologist, nor is it a product of reliable data and methods, largely composed by proprietary algorithms (AI, ML, or closely related technology) in which designated experts have not been equipped to reasonably explain. Such evidence arguably does not meet standards set forth in the Federal Rules of Evidence and under the common interpretation of the *Daubert Standard*.

The Context

The context of this position statement is to solidify the difference between expert meteorological opinions, meteorological data, and that of AL/ML generated products. This applies to both legal testimony and to other consulting activities in which meteorological opinions are required, though the former of the two requires more scrutiny based on guidelines regarding expert witness testimony.

Qualified meteorology experts serving as expert witnesses may incorporate machine learning-derived information into their analysis, provided that the final interpretation, conclusions, and expert opinions are fully attributable to the professional judgment of the meteorologist.

The Association of Certified Meteorologists (ACM) Position

1) ACM believes that AI and ML play a crucial role in the furtherance of meteorological understanding, including the protection of life and property around the world. ACM believes that embracing technology and innovation should be encouraged by all meteorologists in a responsible manner. However, AI/ML should not replace or be confused with human meteorological expertise.

2) It is ACM's position that AI/ML tools can be used to assist a meteorologist in developing an opinion. However, the meteorological output of such tools must be scrutinized for reliability and independently validated by a meteorologist in each work product. The meteorology consultant should be able to explain their methods of determining the reliability of such data as it pertains to each work product.

3) It is ACM's position that the meteorological opinion of a designated expert in matters of litigation, and any meteorological work product presented by the expert (whether in litigation or not), must be a product of a meteorologist's own analysis, and the meteorological opinion provided (in writing or orally) by the designated expert must be wholly and completely that of the meteorologist who authored the opinion.

4) It is ACM's position that meteorological data based solely on proprietary algorithms (i.e. AI, ML) without expert interpretation and scrutiny should not be considered a reliable meteorological opinion. In matters of litigation, the sole reliance on such AI/ML-generated data (without human meteorological interpretation and scrutiny) utilized to support expert opinions in which meteorological events are in question should not be permitted.