# Article information:

分层板球头盔热和湿图的有限元建模 - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S2405844023003869>

# Article summary:

1. This article discusses the development of numerical modeling to simulate the thermal and humidity mapping of layered plate cricket helmets.

2. The finite element simulation was applied to model the temperature and relative humidity (RH) distribution inside NVL and VL helmets, which were processed into temperature-time and RH-time graphs.

3. The model developed is ready for parameter studies on non-ventilated helmets to optimize ventilation outlets for improved thermal comfort.

# 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 is generally reliable and trustworthy in its content, as it provides a detailed overview of the development of numerical modeling to simulate the thermal and humidity mapping of layered plate cricket helmets. It also provides a comprehensive description of how finite element simulations are used to model the temperature and relative humidity (RH) distribution inside NVL and VL helmets, which are then processed into temperature-time and RH-time graphs. Furthermore, it presents results from simulations that are compared with corresponding experimental measurements, showing good correlation in terms of overall trends in regional temperatures and relative humidities over time, despite parameters such as helmet movement or local sweating not being taken into account in the modeling process.

However, there are some potential biases present in the article that should be noted. For example, while it does provide an overview of how numerical modeling can be used to simulate thermal comfort within cricket helmets, it does not explore any counterarguments or alternative approaches that could be taken when considering helmet design for improved thermal comfort. Additionally, while it does provide some evidence for its claims regarding simulation results matching experimental measurements, more evidence could have been provided to further support these claims. Finally, there is no mention of possible risks associated with wearing cricket helmets under certain environmental conditions; this could have been explored further in order to provide a more comprehensive understanding of how helmet design affects thermal comfort levels.

# Topics for further research:

* Alternative approaches to cricket helmet design
* Thermal comfort risks associated with cricket helmets
* Finite element simulations for cricket helmet design
* Effects of helmet movement on thermal comfort
* Local sweating and cricket helmet design
* Experimental measurements of cricket helmet thermal comfort

# Report location:

<https://www.fullpicture.app/item/2207cd7af07e3dfaf0c17355c159acd6>