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THE CASE AGAINST MESOPIC PHOTOMETRY

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Recent advances in modeling visual performance in the mesopic region has revived interest in developing a mesopic photometry with properties analogous to traditional photopic photometry (e.g. proportionality and additivity). In mesopia, the rod and cone receptors provide two separate channels affecting visual phenomena, with their relative contributions strongly dependent upon the overall light level. A model that reflects this reality cannot exhibit proportionality or additivity, and any attempt to constrain the model to yield these properties is attained at the high cost of losing essentially all relevance to vision. Attempts to define a mesopic luminance can only hinder real progress in visual performance modeling. We show here that mesopic photometry is not possible despite successes achieved in visual performance modeling. Such modeling has been and can continue to be made by considering photopic and scotopic luminances as separate inputs to visual performance.