A simplified model of all-sky artificial sky glow derived from VIIRS Day/Night band data

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Highlights

- A simplified spatial model provides a high confidence estimate of an all-sky light pollution ratio (ALR) metric for large regions
- The model uses VIIRS day/night band cloud-free composites as input and is verified with ground-based all-sky V-band photometric artificial sky brightness measurements
- The simplified algorithm is based upon an all-sky brightness/distance relationship between the location of the observer and the source of upward radiance
- We provide limitations of the model including the effect of sources of varying spectral power distribution and the appearance of artificial sky glow to the human eye