

Electronic Supplementary Material 2

When night never falls: Female sexual signalling in a nocturnal insect along a latitudinal gradient

In: Behavioral Ecology and Sociobiology

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Equation 1 Total irradiance of female glow in photons and ambient light were calculated from the surface area of skewed Gaussian fit and over 300-700 nm Savitzky-Golay (S-G) filtered average spectrum in MATLAB R2016b

$$\sum_{\lambda=300}^{\lambda=700} \frac{E(\lambda)}{Ep(\lambda)} = \sum_{\lambda=300}^{\lambda=700} \frac{E(\lambda) \Delta\lambda}{hc}$$

where λ is wavelength (in nm), $E(\lambda)$ is total energy in watts and $Ep(\lambda)$ is photon energy over wavelengths, h is Planck's Constant, and c is the speed of light.

Equation 2 We used the equation in MATLAB R2016b to calculate the ambient light intensity (in lux) in each glowing spot of female glow-worms, from the surface area of over 300-700 nm S-G filtered average spectrum

$$Ev = 683 \text{ lm/W} \cdot \sum_{\lambda=300}^{\lambda=700} E(\lambda) \bar{y}(\lambda) \Delta\lambda$$

where $E(\lambda)$ is ambient irradiance spectrum (in W/m^2), $\bar{y}(\lambda)$ is photonic luminosity curve, and λ is wavelength (in nm).