### Figures

**Figure (a):** Box plots showing the broadband absorbed energy bias across different solar zenith angles (SZA) for pure, dust, soot, and mixed aerosol types. The error bars indicate the spread of data points around the median.

**Figure (b):** Box plots showing the broadband albedo bias across different SZA for pure, dust, soot, and mixed aerosol types. The error bars indicate the spread of data points around the median.

**Figure (c):** Absorbed energy as a function of wavelength for a specific set of aerosol properties: SZA = 20°, SSA = 42 m² kg⁻¹, Soot = 0 ng g⁻¹, Dust = 25,000 ng g⁻¹, and τ = 0.0. The error is indicated by the red line.

**Figure (d):** Absorbed energy as a function of wavelength for a different set of aerosol properties: SZA = 20°, SSA = 42 m² kg⁻¹, Soot = 200 ng g⁻¹, Dust = 50,000 ng g⁻¹, and τ = 0.0. The error is indicated by the red line.

### Equations

For SZA = 20°, SSA = 42 m² kg⁻¹, Soot = 0 ng g⁻¹, Dust = 25,000 ng g⁻¹, and τ = 0.0, the broadband energy bias is 0.840 W m⁻².

For SZA = 20°, SSA = 42 m² kg⁻¹, Soot = 200 ng g⁻¹, Dust = 50,000 ng g⁻¹, and τ = 0.0, the broadband energy bias is 1.326 W m⁻².