Contribution ID: **7**   Type: **Oral Presentation**

Simulation of Ground Level Spectral Solar Irradiance in Rwanda using LibRadtran.

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Optimising solar power development in Rwanda requires accurate knowledge of the spectral distribution of solar irradiation reaching the Earth's surface at different wavelengths. To characterize the effect of aerosols on surface solar irradiance, the simulation of a cloudless atmosphere is presented in this study. The irradiance spectrum is obtained by solving the radiative transfer equation for this aerosol distribution using established radiative transfer codes. The results show a spectral distribution simulated using LibRadtran, which is one such software package. Its main program, UVSPEC is a radiative transfer tool mainly used to compute radiances, irradiances, and actinic fluxes in the solar and thermal spectral regions.

The aerosols properties are furthermore investigated through comparison with archival sunphotometry data from the region and their effect on the surface solar radiation. It is then shown how the outcome of this calculation may be used to estimate local energy yield.

Apply to be
 considered for a student
   award (Yes / No)?

yes

Level for award
 (Hons, MSc,
   PhD, N/A)?

PhD

Main supervisor (name and email)
and his / her institution

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Would you like to <br> submit a short paper <br> for the Conference
 Proceedings (Yes / No)?

yes

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