

## Parallel Session C: Climate Change Impacts

### C3: Implications for renewable energy

#### Impact of climate change on future potentials of solar electricity generation over West Africa

**Colman Ibe**, *Energy, Climate, and Environment Science Group, Imo State Polytechnic Umuagwo, Ohaji, PMB 1472 Owerri, Imo State, Nigeria*

**Colman Ibe, Victor Dike, Justice Amaechi**, *Energy, Climate, and Environment Science Group, Imo State Polytechnic Umuagwo, Ohaji, PMB 1472 Owerri, Imo State, Nigeria*

Solar power generation or utilization is highly dependent on the availability of adequate solar radiation which is strongly influenced by weather and climate. To examine the impact of climate change on the future solar energy resource potentials over West Africa during 2020-2060. We analyze multi-model ensemble of the Africa-CORDEX regional climate simulations. We found that under two greenhouse gas concentration scenarios that annual solar resource ranges from 300 Wm<sup>-2</sup> in the northern extremity to 160 Wm<sup>-2</sup> in the Guinea Coast region. Additionally, it is observed that the solar radiation trends increased significantly in the region. This suggest that future climate scenarios appears not to affect the stability of solar electric power generation over West Africa.

**Keywords:** Solar radiation, Future projection, West Africa