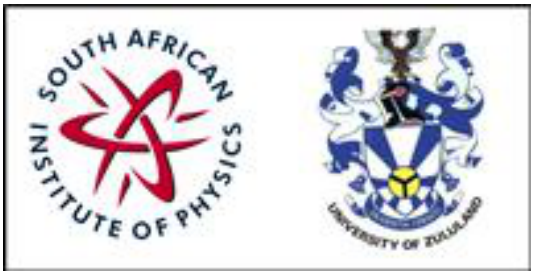

Contribution ID: **181** Type: **Poster Presentation**

Assessment of wind energy potential in the Amatole District in the Eastern Cape Province of South Africa

Wednesday, 10 July 2013 17:40 (1 hour)

Abstract content
   (Max 300 words)

South Africa is heavily depended on fossil fuels for its energy needs and is the highest emitter of greenhouse gasses in Africa and third largest in the world. However, South Africa is endowed with unexploited renewable energy resources. It is therefore imperative to shift to renewable energy sources for power production to mitigate the carbon emissions. The purpose of this paper is to investigate wind energy potential in the Amatole District in the Eastern Cape Province of South Africa. The Weibull density function was used to estimate the wind energy potential in this location. The Weibull parameters were determined basing on Meteorological data acquired from a local Meteorological Office. Preliminary results show that the values of k (the Weibull shape parameter), ranged from 1.72 to 2.41 while those for c (Weibull scale parameter) ranges from 3.9 to 5.4. The study shows that the area has reasonable wind energy potential for decentralized wind energy systems, exploitable at 10m or more for low speed wind turbines. It therefore follows that it is not suitable for large scale wind energy production.

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

No

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

Dr. G Makaka, University of Fort Hare, gmakaka@ufh.ac.za

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

yes

Primary author: Mr MASUKUME, Peace-Maker (University of Fort Hare, Department of Physics)

Co-authors: Mr TINARWO, David (University of Venda); Mr MAKAKA, Golden (University of Fort Hare, Department of Physics)

Presenter: Mr MASUKUME, Peace-Maker (University of Fort Hare, Department of Physics)

Session Classification: Poster2

Track Classification: Track F - Applied Physics