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Measurements of Atmospheric Carbon Dioxide in South Africa

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Abstract content (Max 300 words) - Formatting & Special chars

It has become essential to accurately measure the emission and uptake of atmospheric carbon dioxide (CO_2) around the globe. Atmospheric CO_2 plays a central role in the Earth's atmospheric, ocean and terrestrial systems and it has been recognized as the greatest contributor to the anthropogenic greenhouse gas effect. Monitoring of atmospheric CO_2 and other greenhouse gases has been identified as a priority by international agencies and governments departments that are interested in mitigating the effects of climate change. The Global Change and Ecosystem Dynamics research group of the Global Change competency area at the Council for Scientific and Industrial Research unit of Natural Resources and the Environment has been engaged in terrestrial carbon cycle research for over a decade. The group has also invested heavily in developing and adopting skills to monitor the concentration of atmospheric CO_2 using the traditional technique, notably the non-dispersive infrared spectroscopy (NDIR) analyzers and emerging laser based technique (Wavelength-scanned cavity ring-down spectroscopy (WS-CRDS) Analysers). This paper will report on the ambient concentrations of atmospheric CO_2 measured over three geographically different regions within South Africa, using the traditional technique at Skukuza and Malopeni flux towers in the Kruger National Park, and laser based technique employed at Elandsfontein and Lephale within the Highveld and Waterberg air quality priority areas in the interior of South Africa and at the coastal site of Cape Point.

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No

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

N/A

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Yes

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Yes

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