Post-Doc Fellowships at Stellenbosch University and UKZN: Ocean Carbon – Climate Science 2025 - 2027

The School for Climate Studies at Stellenbosch University (www.climate.sun.ac.za) in collaboration with the Southern Ocean Carbon Climate Observatory (SOCCO) at CSIR, DFFE: Oceans and Coasts Branch, and SAEON and UKZN is building a new research programme to support South Africa's emerging science, technology and policy needs in the emerging field of marine Carbon Dioxide Removal (mCDR). We are offering **three (3)** exciting new Post-Doc fellowships for 2 + 1 years starting in 2025 in the following themes:

1. Development of a coastal ocean carbon observatory – How do sub-tropical East coast estuarine systems modulate the land - ocean carbon fluxes?
    - Skills and interest: A PhD in quantitative ocean / estuarine biology and or biogeochemistry with field and lab work with water samples, numeracy and data analysis (use of R) and possibly ecosystem modelling obtained within the last 5 years.

2. Scale sensitivity of uncertainties in CO2 and climate observations and reconstructions in the South African coastal – oceanic zone – This will combine existing and new ocean observations from ship and robotics-based experiments as well as from model based simulated sampling experiments with machine learning reconstruction tools to minimize the long-term uncertainty of a coastal ocean observatory.
    - Skills and interest: A PhD with a background in physics or mathematics obtained within the last 5 years is necessary while training in oceanography would be an advantage. Skills in numerical analysis and Python coding are essential as will be an interest in the use of machine learning methodologies.

3. What are the impacts, feedbacks and risks in the SA regional and coastal ocean systems to scalable ocean afforestation and alkalinity enhancement Carbon Dioxide Removal (mCDR)? This strategic approach to mCDR will combine modelling and observational experiments.
    - Skills and interest: A PhD obtained within the last 5 years and background in physics or mathematics is necessary while training in oceanography would be an advantage. Skills in numerical analysis and Python coding are essential as will be an interest in the use of machine learning methodologies.

This is a fantastic opportunity to contribute to regional and global climate science and resilience to this existential challenge. Each of these will come with opportunities for international exchange, summer schools and skills development support. If you are interested, please send us a 1-page Expression of Interest letter explaining why this may be of interest and why you want to do a PhD as well as your CV, Honours and MSc grades. We reserve the right not to award any fellowships and will make awards in support of Stellenbosch University and NRF equity principles.

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