



## Data@breakfast Webinar Series

You are invited to the next data breakfast by

**Prof Simon Connell**  
University of Johannesburg

Friday, 12 March 2021 Time: 07h30 - 08h30

### **Nuclear energy in the mix: Can it power Africa sustainably?**

**Abstract:** Only South Africa and Egypt have Nuclear Reactors, or are building them, at present. The new era of Nuclear goes beyond electricity generation, and introduces process heat. This can be used for desalination, and also for powering the hydrogen and synthetic fuels economies. The size of the reactors also now scales from mere kWatts through to GigaWatts. The latter powers and stabilises large grids with clean energy. The midrange Small Modular Reactors or SMRs, can be deployed at city and mine level and for mini grids. The former can power remote outposts. All introduce a new level of safety - walk away safety, or be so-called fail safe. They are cost competitive over their 60-80 year lifespan. In this I will review the physics case, and also discuss the socio-economic context. I will also discuss what the opportunities for Africa are.

**Bio:** Prof Connell is Professor of Physics within the Faculty of Engineering and the Built Environment at the University of Johannesburg. He has research interests in Particle Physics, Nuclear Physics, Nuclear Energy, Materials Science, Quantum Physics, High Performance Computing and Applied (innovation) Physics. His rating by the SA Research Funding Agency (NRF) cites him as having “considerable international recognition”. He is a past president of the South African Institute of Physics. He is the founding member of the South African participation in High Energy Physics at the ATLAS Experiment at CERN, where with his group he participates in a Beyond Standard Model search as well as engineering and technical activities.

#### **Register in advance for this webinar:**

[https://ukzn.zoom.us/webinar/register/WN\\_xkPC2fR3TfOmRJPplcNCEw](https://ukzn.zoom.us/webinar/register/WN_xkPC2fR3TfOmRJPplcNCEw)

After registering, you will receive a confirmation email containing information about joining the webinar.