



AIMS

African Institute for
Mathematical Sciences
SOUTH AFRICA

Computational Algebra: Postdoctoral Fellowship in Mathematical Foundations and Scientific Computing

The new area of algebraic statistics exploits methods from algebraic geometry and related fields to solve problems in statistics. This unexpected topic arises because most statistical models for discrete random variables turn out to be algebraic varieties. One important example is provided by the trees which arise in molecular phylogenesis. The important properties of the ideal of the variety can be investigated using Groebner bases and software developed by the members of this research group. Apart from producing new results and insights, this area provides excellent training in the use of software for answering mathematical questions, and the use of algebraic models of realistic systems.

Planned Supervision: Prof Barry Green / Jeff Sanders in collaboration with AIMS distinguished Research Fellows; Prof Gerhard Pfister and Prof Wolfram Decker (Kaiserslautern)

Fellowships are tenable for two years, contingent on satisfactory progress, and could be extended for a third year. Fellowships are immediately available and the value of the award ranges between R200 – R240k per annum, taxfree, subject to qualification and experience.

Preference will be given to African applicants and those from SADC member states are particularly encouraged.

Duties

- Conducting research
- Publish results in leading peer-reviewed journals and at international conferences
- Assist senior researchers in leading students into exciting research projects
- Collaborate with researchers at the AIMS Research Centre

Requirements

- A relevant doctorate of high standing
- A developing research capability which will lead to good international publications
- Ability to tutor postgraduate students successfully
- Good communication skills
- Fluency in English
- Ability to work as part of an interdisciplinary team

Applications should consist of

- A covering letter motivating the application
- A comprehensive curriculum vitae stating research plans in the above or related areas
- Two reference letters from academics familiar with your work
- Statement on citizenship and whether a South African work permit is currently being held
- Other practical information such as earliest date of commencement

Please note the Fellowship cannot be held concurrently with any supplementary funding.

Send completed applications to rene@aims.ac.za

Send subject related questions to jsanders@aims.ac.za