Biocomplexity Faculty Search Committee
c/o Prof. Rob de Ruyter
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Re: to apply for the open positions (preferably theoretical/computational)

Dear Chair, Dears Members of the Faculty Search Committee:

Please consider my application for the open positions

I have a strong research background in computer simulation, advanced numerical methods for data analysis, applied statistics, kinetic theory, fluid dynamics with wide working experience in statistical simulations of heating and acceleration of charged particles by radio frequency and micro waves in external magnetic fields.

My basic background in Physics and Mathematics was obtained from the Mathematics and Mechanics Faculty, State St-Petersburg University (St-Petersburg, Russia):
1992-1996, Post-Graduate School, (PhD with Honors)
1985-1992, Graduate School, (MS with Honors)
1983-1985 College of Physical and Mathematical Sciences attached to the State St. Petersburg University.
During the special courses and practical studies I have gained experience in advanced mathematical, statistical and computational tools for simulations of real physical systems. I can do attitude to problem solving, with a mixture of theoretical and practical skills. In addition, I have prepared to learn promptly new skills to enter into new research areas and have the ability to work both within a team and on my own.

I have the fundamental teaching background and five years of teaching experience in General Physics, Applied Mathematics-Computer Simulations at the undergraduate level, directed successfully graduate students in specialty "Statistical, numerical simulations of Fluids, Gas and Plasmas".
So I can teach effectively any course in Physics actively using high-level applied Mathematics, Programming, Computer Simulations.
Both my parents were teachers too (one in physics and mathematics, other in physical culture and history).

So my general background allows me to adjust my research/teaching interests as would be required inside the School. I wish to gain experience in new fields too.

During 1995-2001 my research was focused in statistical, kinetic simulations of ion flows and wakes in space magnetoplasma. My basic results were published in leading

research journals (incl. Physical Review E, Planetary and Space Science, Astrophys. Space Sci., Advances in Space Research).

Since Jan.,2002 I involved in statistical simulations of radio frequency, micro wave heating and relativistic acceleration of electrons in external magnetic field at the Statistical and Plasma Physics group, Association EURATOM, Free University of Brussels, Belgium, as a Post-doctoral Researcher with Professor Daniele Carati.

We proposed a new scheme (using special configurations with primary high amplitude wave and secondary low amplitude one or multiple waves) for the most effective acceleration, developed its physical description as a resonance moments method (RMM) and performed direct particle Monte Carlo simulations supporting our predictions. Report on these results is submitted to Physical Review Letters.

For some more information please find attached my Resume including my research background and the list of publications.

I would be happy to answer any further questions you might have.

I know I could do a good job for you,

With great enthusiasm,

Maxim Ponomarjov

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P.S. For reference please contact:

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