



Bapan Ghosh

Raman-Charpak Fellow-2013

Workplace: **INRIA**, Sophia-Antipolis, FRANCE

Supervisors: **Dr. Frédéric GROGNARD** and **Dr. Ludovic Mailleret**

Indo-French Centre for the Promotion of Advance Research (CEFIPRA) is a unique platform for research between two nations, India and France. I am lucky one, being selected as the Raman-Charpak Fellow-2013, in ‘Mathematical and Computational Sciences’ to work in a French research institute for six months. In this regard, I am grateful to all CEFIPRA members in New Delhi, India and Campus France members in France for their kind help in many ways throughout the process.

During my stay, I have been able to enrich myself through collaboration with Dr. Frédéric GROGNARD (Researcher, BIOCORE Team, INRIA, Sophia-Antiplois) and Dr. Ludovic Mailleret (Researcher, INRA, Sophia-Antiplois) and worked in BIOCORE Team, INRIA, Shophia-Antipolis, France. In the project work, I focused on ‘Modeling Biological Pest Control’ and developed mathematical models using ordinary and impulsive differential equations. This research shows how pest populations can be reduced or eradicated by releasing beneficial species (predators) periodically in a cropping system. We have shown how frequent and smaller releases of biocontrol agents (predators) prevent pest outbreak compared to infrequent and massive ones. Most, importantly, this study investigates how population migration between two nearby cropping fields may penalize pest eradication.

INRIA (Sophia-Antipolis) is a world-class research institute, I believe, has all the modern facilities for the present state-of-the-art research. Dr. Frédéric GROGNARD and Dr. Ludovic Mailleret spent lot of times for discussion in person and used to arrange a group meeting in every weekend. Their great and immediate intuitions on a research problem, indeed, attracted me very much and dipped me in the well of several intriguing problems in the proposed research arena. Besides these, I, amazingly, shared my ideas with other colleagues and received their substantial comments and suggestions with enthusiasm. INRIA conducts many seminars/lectures through the years to encourage young researchers. INRIA provided me all financial supports for presenting my research work in an international conference in Sweden.

Of course, I have studied a different subject in addition to my learning and research activities in India. This exchange program has, certainly, enhanced my skill in the concerned field and I have learnt new mathematical tools and computation techniques. It has enriched my long-term desire to know-how the international state-of-the-art research and the landscape of its pursuance. Discussions with Dr. GROGNARD and Dr. Ludovic have also enriched my skill to write a research article of international journal of repute. Overall, this collaboration would be of immense help for my future research.

I, really, enjoyed the enchanting beauty in France along with bunches of students coming from different countries and cultures across the globe. It was a great time meeting with other people, exchange views and making friendship, which made life easy and enjoyable.