



# 9<sup>th</sup> Jagna International Workshop: Stochastic Analysis – Mathematical Methods and Real World Models



*January 8 – 14, 2020 Pedagogical Level*  
*January 15- 18, 2020 Research Conference*

Research Center for Theoretical Physics  
Central Visayan Institute Foundation  
Jagna, Bohol 6308, Philippines

Stochastic fluctuations are ubiquitous in complex biological, physical, social and financial systems. Literature abounds in studies applying commonly encountered stochastic processes: Wiener, Lévy, Ornstein-Uhlenbeck, Poisson, noise in various forms – white, grey and colored, and fractional stochastic processes for anomalous diffusion. However, rapid advances in technology continue to spew large volumes of data. Maintaining a big picture perspective and decoding information from such rapid data outflow require an expanded mathematical toolbox that minimizes complicated estimation and approximation methods. This Workshop shall then be a forum for discussion of stochastic analytical methods for real world models of complex systems such as those exhibiting memory or dissipation.

The Workshop is the 9<sup>th</sup> in a series organized by the Research Center for Theoretical Physics (RCTP). The informal nature of the Jagna Workshop series is meant to foster active interaction among speakers and participants, and to encourage graduate students and postdoctoral researchers to get insights from invited lecturers so that viable research targets could be clearly defined. There will also be sessions for oral and poster presentations by the participants.

For research and teaching capacity building in local institutes, prior to the research conference, there will be a one-week introduction to stochastic analysis by Prof. Ludwig Streit. An orientation for the pedagogical lectures and some preparatory reading materials can be downloaded from the link <http://ccm.uma.pt/jagna2020/>, or at, <https://sites.google.com/g.msuiit.edu.ph/msuiitphysics>.

## **INVITED SPEAKERS**

**Yuri G. Kondratiev** (*Universität Bielefeld, Germany*)

**Tyll Krueger** (*Wroclaw Technical University, Poland*)

**Yutaka Shikano** (*Keio University, Japan*)

**José Luís da Silva** (*Universidade da Madeira, Portugal*)

**Ludwig Streit** (*Universität Bielefeld, Germany / Universidade da Madeira, Portugal*)

**Roland Winkler** (*Jülich, Germany*)\*

\* To be confirmed.

## **WORKSHOP ORGANIZING COMMITTEE**

**Christopher C. Bernido** (*RCTP, Jagna*)

**M. Victoria Carpio-Bernido** (*RCTP, Jagna*)

**Jinky Bornaes** (*MSU – Iligan Institute of Technology*)

**Ludwig Streit** (*Universität Bielefeld / Universidade da Madeira*)

**Rowena Varela** (*Caraga State University*)

## **CO-ORGANIZERS**

*Mindanao State University – Iligan Institute of Technology*  
*Caraga State University*

## **WORKSHOP SITE**

The Research Center for Theoretical Physics (RCTP) is located in the small coastal town of Jagna in the southern part of the island province of Bohol. Situated in the Central Visayas Region of the Philippines, this island is known for its white beaches, snorkeling and diving sites, the Tarsier, Chocolate Hills, scenic rivers, as well as its rich cultural and historical heritage. The town of Jagna has a port which connects it to several neighboring provinces by sea. Jagna is 74 km (1.5 hrs-drive) from Panglao International Airport in Bohol. There are several direct daily flights from Manila to Panglao, and ferries from Cebu to Tagbilaran (63 km from Jagna). Manila and Cebu are international gateway cities.

## **PARTICIPATION AND FEES**

Applications for participation should be sent, at the latest by 30 October 2019, to the following email addresses: [cvif.jagna@gmail.com](mailto:cvif.jagna@gmail.com) or [cbernido.cvif@gmail.com](mailto:cbernido.cvif@gmail.com). Please indicate clearly if participation is for the pedagogical lecture or only for the research conference, as well as your affiliation.

There is no registration fee for the pedagogical lectures (8 – 14 January 2020), but interested participants should have a background in probability theory and Hilbert spaces. Participants should register early since there are prerequisite reading materials. For further details, please communicate with Prof. Streit through his email address: [streit.ludwig@googlemail.com](mailto:streit.ludwig@googlemail.com).

Registration for the research conference proper (15 – 18 January 2020) is US \$ 100 which includes registration, materials, lunch and refreshments for 3 days of scientific sessions. Participants who wish to contribute a paper or poster should submit their Abstract by 30 October 2019 for review.

## **WORKSHOP PROCEEDINGS**

Arrangements will be undertaken for a printed copy and on-line publication of the Proceedings of the Workshop. Instructions to contributors on the preparation and submission of camera-ready manuscripts will be given once these are finalized.

## **ACCOMMODATION**

There are pension houses near the workshop site. Room rates per night range from US \$25 to US \$30 (Exchange rate: US \$1  $\approx$  PhP 51.3). More upscale places (starting from US\$70) are around a half-hour drive away from the Workshop venue.

## **PRE/POST-WORKSHOP ARRANGEMENTS**

Reservations and arrangements can be facilitated by the organizers for those who plan an extended stay before or after the Workshop, either for leisure, or for seminars and discussion sessions.

There are a couple of tennis courts as tennis is a favorite sport of the townsfolk. A few hills in the town are within easy hiking distance. Small beach resorts are also nearby.

Popular beach resorts and PADI dive centers are on Panglao Island (18 km southwest of Tagbilaran City) and in the peninsular town of Anda (90 km east of Tagbilaran City, or 27 km east of Jagna). A Google search can yield a wide spectrum of hotels and pension houses.

*For more information contact the Organizers at:*

Research Center for Theoretical Physics

Central Visayan Institute Foundation, Jagna, Bohol 6308, Philippines

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