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## Report on the mission to Mandalay, Myanmar

*31 October-18 November 2016*

**Michel Jambu**

The mission in Mandalay consists into three different parts.

- 2-3 November : Meetings at the department of mathematics of the University of Mandalay (UM).

Last year, during the 8th International Conference on Science and Mathematics Education in Developing Countries which was held in Yangon, we proposed to the Head of the department of mathematics of UM, Prof. Ohn Mar, to extend the project which was located at RUPP (Cambodia), to the two other components, NUOL (Laos) and UM (Myanmar), of the network SEAMaN<sup>1</sup> supported by ISP<sup>2</sup>. In February, I wrote a working document which was the framework of the discussions of these meetings. This document was submitted to the Ministry of Education of Myanmar by Prof. Ohn Mar. The goal of these meetings was to define the needs and how to help UM and to precise the agenda of the project.

The participants to these meetings were

- Prof. Ohn Mar and 7 professors of mathematics of UM.
- Brigitte Lucquin (Paris 6), Stéphanie Nivoche (Nice), Michel Waldschmidt (Paris 6), Michel Jambu (Nice) and partially Paul Vaderlind (ISP).

With Brigitte Lucquin, we wrote a document which is a presentation of the project. This document is joined to this report. Prof. Ohn Mar presented this document to the Ministry of Education (Myanmar) for approval.

- 4-6 November : 9th International Conference on Science and Mathematics Education in Developing Countries hosted by UM. As invited speaker, I gave a talk on “Introduction to Quantum Calculus”.
- 7-17 November : I gave a series of nine lectures (18 hours) on Topology to the PhD students of UM. About twenty students attended my lectures. In most of the developing countries, Topology and Geometry are quite weak and they are considered as too abstract. So, my purpose was to try to explain the interest of Topology both for mathematicians and other scientists. In a first

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1. <https://www.isp.uu.se/what-we-do/mathematics/networks/seaman/>

2. International Science Program

step, I gave a general overview of these topics, and in particular, I explained how Topology was crucial in the researches of the four Nobel Prize of Physics 2016. Then, I focused on many examples showing how to represent many topological spaces focusing on topological surfaces. Finally, I gave one application of Topology to Robotics.

The students asked no questions. The usual way to teach mathematics in Myanmar is to read some chapters of a book and to solve some exercises. They learn mathematics without trying to have a global point of view of the topic.

Each year, about twenty PhD students defend their thesis in mathematics at UM. But they don't publish any paper in international journals of mathematics. The thesis are mainly technical with very few examples. They could be considered as Master thesis.

The hospitality of our colleagues from Myanmar has been remarkable and I would like to express my warm thanks to Prof. Ohn Mar and her student Aung San Oo who made my stay especially nice.

Michel Jambu

77 Promenade des Anglais

06000 Nice

tel (+33) 7 68 43 20 19