Mission at the National University of Mongolia

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It is the third time that I visit the National University of Mongolia (NUM), the first one was in 2013 where I jointly organized a CIMPA school, the second time was in 2014 partly with Herb Clemens who represented IMU/CDC. H. Clemens stayed four days and I, two weeks. Following these two visits, there was a MOU between NUM and the University of Nice-Sophia Antipolis (2015) which covers another MOU (2016) between the departments of mathematics of the two universities. This mission was made jointly with my colleague, Prof. Stéphanie Nivoche, who was very active in the preparations of the MOU's.

The goals of these missions was to start the activities of the MOU's, and in this framework, S. Nivoche gave a course on Complex Analysis, and I gave a course on Topology. These courses are part of the master program of mathematics of NUM, so we have to give an exam for the master students.

Besides the master students, some teachers of the department of mathematics attended our lectures, as well as some teachers of the secondary schools. There were about 20 participants, but due to some constraints, the teachers could not attend all the lectures.

The content of my course was the following. The first part concerned general Topology that the students were supposed to know. The second part was an introduction to Combinatorial Topology with the basic notions of simplicial complexes. Then the last part was dedicated to the classification of the compact surfaces.

These subjects were covered in 27 hours which is not enough to give all the details, but I wrote some complete lecture notes and the students can find all the proofs and explanations. Moreover, many exercises are proposed in the notes, but the lack of time prevented me to solve enough exercises.

The Mongolian Mathematical Society (MMS) has organized a meeting on the afternoon of Friday 28 May and they invited us to give a one hour talk. My talk was "*An introduction to Quantum Calculus*". Besides our two talks, four teachers of NUM gave shorter talks but they talked in Mongol and it

was not possible for us to understand. The new president of MMS is a young mathematician who got his PhD on C^*-algebras at Penn State. I suggested him to contact the president of the French Mathematical Society (SMF) and I explained the role of EMS/CDC and its program ERCE. MMS already has contact with SEAMS and IMU.

The new vice president for research, innovations and international relations, Dr Baldorj Ochirkuyag, asked me for a meeting, at the end of my last lecture. He wanted to talk about the MOU's with the university of Nice. Moreover, he would like to create the position of teacher-researcher as it exists in France. The teachers at NUM have no time to do research. I also met J.F. Filtz, in charge of the cultural affairs at the French Embassy. The French Embassy jointly with the Ministry of Education of Mongolia, offer ten scholarships for the masters in France.

The hotel was comfortable, with a good WiFi, and at less than hundred meters from the university.

I would like to thank Uugnaa, teacher at the department of mathematics of NUM, who took care of everything during our stay.

Finally, I thank IMU/CDC which took in charge all my expenses for this mission.