

INFTY ESF - Exchange Grant 2578 - Final Report

Researcher: **Prof. Boban Velickovic**, Université de Paris 7 – Diderot

Host: **Prof. Jouko Vaananen**, University of Helsinki

Institution: **Mittag Leffler Institute**, Djursholm, Sweden

Period of visit: 03/10/2009 – 31/10/2009 – **4 weeks**

Title of proposal: **Structure of forcing axioms**

Purpose of visit: participation in the program **Mathematical logic: Set Theory and Model Theory**

Description of the work carried out:

- During my visit to the Mittag Leffler Institute in October 2009 I gave a lecture in the main seminar on October 14, title of the lecture **Countable Borel equivalence relations** and moderated a discussion with H. Woodin on his work on October 30.

- I worked with J. Vaananen on a joint paper with S. Shelah '**Long Ehrenfeucht-Fraissé games and forcing**'. The first draft of the paper exists, but we are still working on some remaining issues. The paper should be completed in the next couple of months.

- I initiated a cooperation with R. Kossak and A. Enayat on the complexity of the isomorphisms relation for the class of finitely generated models of Peano arithmetic. This work is currently in progress and it is too early to predict what will come out of it.

-I discussed the structure of forcing axioms with M. Magidor and in particular the problem whether the Bounded Martin's Maximum implies that the nonstationary ideal is saturated.

- I discussed countable Borel equivalence relations with K. Luosto and suggested to him some problems to work on.

- In addition to this, I continued working on a joint paper with M. Foreman on structural Chang's conjecture and the Tukey ordering.

I expect to continue collaboration with J. Vaananen which has been going on for a number of years. I also expect that the new collaboration established during my visit with R. Kossak and A. Enayat will continue.

Projected publications resulting from this grant:

- **Long Ehrenfeucht-Fraissé games and forcing** (joint with J. Vaananen and S. Shelah)

- **Structural Chang conjecture and the Tukey ordering** (with M. Foreman)