Report on a Scientific Short Visit
Attending the Young Set Theory Workshop in Luminy, 2012

Purpose

The purpose of the project was to attend the Young Set Theory Workshop, in particular to attend the tutorial given by S. Todorčević and I. Neeman and to discuss research with participants working in similar areas of Set Theory, i.e. combinatorics of countable sets, definable ideals and forcing.

Work carried out

I attended all of the lectures at the meeting, the tutorial given by I. Neeman being particularly illuminating. I have also discussed with B. Farkas and others the following questions:

Question. If a filter is Rudin-Keisler above an ultrafilter, can one find an injective sequence in $\beta\omega$ which would converge with respect to this filter?

Definition An ideal I is monotonic if every sequence of real numbers contains a monotonne subsequence indexed by a set positive with respect to I. It is (2,2)-Ramsey if every countable graph contains either an I-positive clique or an I-positive free graph.

Question. Is every monotonic ideal a (2,2)-Ramsey ideal?

We haven't been able to find answers to these questions, although some progress was made on the first one, namely:

For a positive answer it would be enough to prove, that one can extend any zero-dimensional topology on ω in which all positive numbers converge to 0 with respect to the filter to an extremally disconnected topology having the same property.