

SCIENTIFIC REPORT VLITAS DIMITRIOS

I completed a seven week visit to the University of Barcelona, starting on Oct 29, where I worked with professor Joan Bagaria. During that visit I gave two talks on the Set Theory seminar regarding my recent work on Ramsey Theory. Prof. Bagaria has a group of Graduate students whose main works concentrates on obtaining Ramsey results not by the use of the traditional combinatorial techniques but by using the theory of Forcing. My self I am an expert of the the combinatorial tools that are used traditionally on that area. As a result we are trying to combine our expertise's to obtain a new approach on the subject.

During my seven week visit I finalize and submit my paper that concerns one of the results obtained in my PhD thesis concerning canonical Ramsey theorems of strong subtrees of a given tree U that has a fixed branching number b but of infinite length. This paper is submitted in the Discrete Mathematics.

Finally we established with prof. Bagaria a long term project that concerns a deep interaction of the theory of Ramsey spaces, as presented in a recent work of prof. Stevo Todorcevic and the theory of Forcing. In particular in the recent book of prof. Todorcevic a notion of Topological Ramsey space is introduced with open sets defined identically as the Matthias forcing conditions are in the context of the Ellentuck space. That hints us the idea to examine the properties of the corresponding partial orders that arise from the theory of Ramsey spaces viewed as forcing conditions. This is a long term project since the theory of Ramsey spaces is newly developed and we have to gain a deeper understanding of the Field.

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