

FINAL REPORT FOR THE INFTY EXCHANGE GRANT 3010

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Period of the visit: 2 November 2010 – 15 November 2010

Title of the project:

Bounded forcing axioms

Realization of the research plans.

This has been a continuation of my previous visit at the Kurt Gödel Research Center in the first half of 2010. Now I have been working on improving the results obtained during the first visit, in particular on the characterization of the forcing notions embeddable into a two-step iteration of a σ -closed forcing followed by a ccc forcing. According to a conjecture due to Baumgartner, this should be the same class as the forcing notions satisfying Axiom A.

During my previous visit, I have obtained a counter-example to the original statement of the conjecture and provided a partial characterization connected with Axiom A. The main achievement of the current visit was to prove that Baumgartner's conjecture is true after a slight strengthening of the definition of Axiom A. I introduced the class of strong Axiom A forcings, which is, roughly speaking, the class of those forcings, which satisfy Axiom A after taking products with all σ -closed forcings. Then I proved that forcings embeddable into σ -closed*ccc iteration are precisely the forcings satisfying strong Axiom A.

The results obtained during this visit will become a part of a joint work with Aspero, Friedman and Mota on bounded forcing axioms

2

for the classes of α -proper forcings and forcings embeddable into σ -closed*ccc iteration. The paper should be ready in the first quarter of 2011.