

**Radek Honzik, PhD**  
**Citizen of the Czech Republic.**

Contact details:

Charles University, Faculty of Philosophy, Department of Logic  
Celetna 20, Prague 1, Czech Republic.  
E-mail: radek.honzik@ff.cuni.cz

**SCIENTIFIC REPORT for Short Visit Grant ref.no. 2903, title “Continuum function and large cardinals”**

The purpose of the visit was threefold: (i) present some of the results obtained by me, and also in cooperation with Sy D. Friedman, at the *ESI Workshop on large cardinals and descriptive set theory* taking place in Vienna on June 14–27, 2009; (ii) continue to work on a common project with Sy D. Friedman dealing with definable wellorders at large cardinals; (iii) continue to work on my project concerned with optimal strength assumptions concerning global realization of an Easton function while preserving large cardinals [improvement on the article in [1] *Annals of Pure and Applied Logic*, 154, 2008, pp.191-208 (with Sy D. Friedman)].

In some detail, we worked on partial problems concerned with devising iterations which would be “lifting-friendly” while coding some wellorders (an important concept for preservation of large cardinals which are defined through embeddings). This is a difficult problem, and for the time being only partial results have been obtained. We expect and hope for future cooperation on this topic.

As regards (iii) and the optimal strength assumptions, I am optimistic that a new forcing definition is available to solve this problem, at least in the paradigmatic case of  $2^\kappa = \kappa^{++}$ , where  $\kappa$  is measurable. I believe that with a careful distribution of the Cohen forcing and the Sacks forcing one can lift the required embeddings globally (the main feature in [1] blocking the construction from the optimal strength was that the forcing at the cardinal  $\kappa^{++}$  of  $M$  (the target model) does not have the required closure properties if we start from the assumption of  $o(\kappa) = \kappa^{++}$  in the ground model). The projected article will acknowledge the support of this grant.