# Combinatorial Principles from Adding Cohen Reals *

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**Abstract.** We first formulate several "combinatorial principles" concerning $\kappa \times \omega$ matrices of subsets of $\omega$ and prove that they are valid in the generic extension obtained by adding any number of Cohen reals to any ground model $V$, provided that the parameter $\kappa$ is an $\omega$-inaccessible regular cardinal in $V$.
Then in section 4 we present a large number of applications of these principles, mainly to topology. Some of these consequences had been established earlier in generic extensions obtained by adding $\omega_2$ Cohen reals to ground models satisfying $CH$, mostly for the case $\kappa = \omega_2$.

## 1 Introduction

The last 25 years have seen a furious activity in proving results that are independent of the usual axioms of set theory, that is ZFC. As the methods of these independence proofs (e.g. forcing or the fine structure theory of the constructible universe) are often rather sophisticated, while the results themselves are usually of interest to "ordinary" mathematicians (e.g. topologists or analysts), it has

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