1064-03-261 **Damir D Dzhafarov*** (damir@math.uchicago.edu), 5734 South University Avenue, Chicago, IL 60637. *Reverse mathematics and the finite intersection principle.*

The finite intersection principle (FIP) states that every family of sets has a maximal subfamily such that the intersection of any finite number of its members is nonempty. Over ZF, FIP is equivalent to the axiom of choice. I discuss a countable analogue of this principle, and its proof-theoretic strength as measured using the tools of reverse mathematics. It turns out that FIP lies below ACA_0 and is incomparable with WKL_0, and as such is very weak by comparison with (countable analogues) of many other choice principles studied in the literature. More specifically, modulo Σ^0_2 induction, it is implied over RCA_0 by the atomic model theorem principle (AMT) studied by Hirschfeldt, Shore, and Slaman (2009), and implies the omitting partial types principle (OPT). This gives a surprising connection between the reverse mathematical content of set-theoretic principles on the one hand, and model-theoreitc ones on the other. This is part of joint work with Carl Mummert. (Received September 12, 2010)