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*An Abstract Approach to Finite Ramsey Theory and a Self-dual Ramsey Theorem*

I will present an abstract approach to finite Ramsey theory. In the abstract context, I will isolate a pigeon-hole principle and prove that it implies a general Ramsey-type result. It turns out that the classical Ramsey theorem, the Hales–Jewett lemma (with Shelah’s bounds), the Graham–Rothschild theorem, the versions of these results for partial functions are all iterative consequences of this general result. Moreover, using this approach, I will prove a self-dual Ramsey theorem, which naturally generalizes both the classical Ramsey theorem and the dual Ramsey theorem of Graham and Rothschild.