On some recent approaches to solving Frankl's Union-Closed Sets Conjecture

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The following conjecture was proposed by Peter Frankl in the 1970s:

Conjecture 1 (Frankl, 1979) *Let $\mathcal{F}$ be a finite family of finite sets closed under unions, which contains at least one nonempty set. Then there exists an element a which is in at least one-half of the sets in the family $\mathcal{F}$.*

Though it has no major application that I am aware of, the problem attracted a lot of attention over the years, due to its elementary statement and apparent difficulty. In fact, it is quite famous and the literature on the subject is extensive. In this talk I will survey some recent results and show some equivalent formulations. Though I will survey various recent attempts at solving Frankl's Conjecture, the main focus of the talk will be on Vladimir Božin's approach, outlining an equivalent formulation and a construction he invented.

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