

# 43 Approaches to Erdős Problem #710: Status Summary

**Cauchy-Schwarz**

- Standard CS
- Per-interval CS
- Weighted CS
- Optimal CS ( $C^{-1}d$ )
- Filtered CS
- Truncated CS
- Variable-constant CS

**Matching/Fractional**

- Greedy matching
- Uniform fractional
- Nonuniform fractional
- FMC dyadic
- FMC three-block
- $V_{min}/V_{rest}/S_-$
- Sinkhorn
- CLP factoring
- $\sqrt{2}$ -partition

**Probabilistic**

- Symmetric LLL
- Target-centered LLL
- Janson
- Erdos-Spencer
- Semi-random nibble

**Sieve/IE**

- Bonferroni (order 2)
- Bonferroni (higher)
- Product-formula sieve
- Unique multiple sieve
- Standard sieve

**Graph-Theoretic**

- Spectral gap
- Haxell
- Turan/MWIS
- Degeneracy
- Ford divisor cap
- Mult. energy (K-M)

**Partition/Structural**

- Dyadic partition
- $\sqrt{2}$ -partition
- Fine partition
- Stratified Hall
- $V_{min}$  disjointness

**Other**

- Derandomization
- Modular remainder
- Recursive doubling
- Surplus-excess
- Neumann series
- Quasi-independence

