Compendium of optimization problems admitting highly parallel approximations

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This is a listing of classes of optimization problems and known optimization problems which are members of those classes. See Section 2 of the corresponding paper for definitions of the complexity classes.

Warning: some of these may not be correctly classified and need verification!

- **NNCO:**
  - [Maximum Variable Weighted Satisfiability](#) [4, Theorem 3.1]
  - [Theorem 8.3]

- **ApxNCO:**
  - [Maximum $k$-CNF Satisfiability](#) [1, Theorem 8.6]
  - [Maximum Acyclic Subgraph](#) [2, Section 7.4]
  - [Minimum $k$-Center](#) [2, Section 7.4]
  - [$k$-Switching Network](#) [2, Section 7.4]
  - [Maximum Bounded Weighted Satisfiability](#) [5, Theorem 4]

- **RNCAS:**
  - [Minimum Metric Traveling Salesperson](#) [2, Theorem 7.1.1]

- **NCAS:**
  - [Maximum $k$-CSP](#) [6, Corollary 13]
  - [Maximum Independent Set for Planar Graphs](#) [2, Theorem 6.4.1]
• **FNCAS:**
  - Subset Sum [2, Theorem 4.1.4]
  - Maximum Clause Weighted CNF Satisfiability [6, Theorem 8]
  - Minimum Weight Vertex Cover [2, Theorem 5.3.6]
  - 0-1 Knapsack [3, Theorem 2]
  - Bin Packing [3, Theorem 3]

• **PO ∩ NNCO:**
  - Linear Programming

• **PO ∩ ApxNCO:**
  - Induced Subgraph of High Weight for Linear Extremal Properties [2]

• **PO ∩ NCAS:**
  - Maximum Matching [2, Theorem 5.2.1]
  - Maximum Weight Matching [2, Theorem 5.2.2]
  - Positive Linear Programming [2, Theorem 5.1.11] [7]
  - Maximum Flow [2, Theorem 5.2.2]

• **PO ∩ FRNCAS:**
  - Maximum Flow [2, Theorem 4.5.2]
  - Maximum Weight Perfect Matching [2, Theorem 4.5.2]
  - Maximum Weight Matching [2, Theorem 4.5.2]

**References**


