

Submodularity Cuts and Applications

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Submodular Maximization under a cardinality constraint

- Appears in many ML problems (feature selection, etc.)
- Main difficulty: Exponentially large number of locally optimal solutions

Submodularity-Cut Algorithm

- Converges to an exact solution in a finite number of iterations
 - Can calculate the upper and lower bounds at each iteration
- => ϵ -optimal solution

$$\max_{S \subseteq V} f(S) \quad \text{s.t. } |S| \leq k$$

Submodular function
(discrete convex function)

