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CAAM 654
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Day 11 — Reading and Questions

Read: 'On Sparse Representations in Arbitrary Redundant Bases' by J.J. Fuchs. IEEE TRANSACTIONS ON INFORMATION THEORY, VOL. 50, NO. 6, JUNE 2004. Ignore anything about the quadratic program. Only focus on section I and VI and VII for the linear program.

1. What does this paper say about when ℓ_1 minimization by a linear program succeeds?
2. Derive the optimality conditions that are in the statement of Theorem 4. That is, suppose you didn't know their exact form and show how you could come up with them.
3. Prove that the conditions in the statement of Theorem 4 suffice to guarantee signal recovery.