

- No failure cases or sensitivity analysis
- No ill-conditioned problems

*Required Fix:*

- Add large-scale examples ( $n \geq 50$ )
- Compare with modern commercial and research solvers
- Report ALL timing information consistently
- Provide error bounds and convergence criteria
- Include failure mode analysis

### 3) "Unified Framework" Claim Requires Proof

*Location:* Contribution (ii), line 166

*Problem:* Claims to "handle all convex-concave RO problems" but:

- What about conic RO (second-order cone, semidefinite)?
- What about integer/mixed-integer RO?
- What about distributionally robust optimization (DRO)?
- Line 193 claims "includes all cases in [Gorissen 2015, Table 1]" but that table has only 6 problem types

*Required Fix:* Precisely characterize the problem class this method CAN and CANNOT solve.

### 4) Digital Implementation Not Addressed

*Location:* Entire paper (continuous-time focus)

*Critical Gap:* How to implement these continuous-time dynamics in practice?

*Unanswered Questions:*

- Which ODE solver? (ode15s mentioned line 1017 but no analysis)
- Step size selection?
- Discretization error bounds?
- Stopping criteria? (When is solution "converged")?
- Numerical stability for stiff systems?
- Projection operator  $[.]^+$  implementation details?

*Required Fix:* Add entire section on digital implementation including discretization analysis, numerical stability, and stopping criteria.

### 5) Literature Review Gaps

*Missing Critical Citations:*

- **Bilevel optimization:** Vicente & Calamai (1994), Dempe (2002), Bard (1998) - directly relevant to Lemma 1
- **Continuous-time optimization:** Helmke & Moore (1994), Schropp & Singer (2000), Polyak (1987)
- **Modern primal-dual:** Chambolle-Pock (2011), Nesterov primal-dual methods
- **Projected gradient flows:** Extensive literature missing

*Consequence:* Cannot assess true novelty without proper literature positioning.

*Required Fix:* Comprehensive literature review section comparing with bilevel optimization, continuous-time optimization, and modern primal-dual methods.

## MINOR ISSUES (Presentation and Clarity)

resume

### 1) Notation Inconsistencies

- Line 202:  $i \in [N]$  definition inconsistent with usage
- Bold  $\mathbf{x}$  vs regular  $x$  used interchangeably
- Inconsistent use of  $\mathbb{R}$  vs  $\mathbb{R}$

### 2) Figure Quality

- Figures 1-4: Low resolution, hard to read labels
- Figure colors and trajectories not clearly explained in captions

### 3) Writing Quality Issues

- Line 146: "may be computationally more expensive" - vague, which approaches?
- Line 447: "quite non-trivial" - subjective, quantify the difficulty
- Line 1015: Only THREE examples for a major contribution

### 4) Incomplete Proofs in Appendix

- Lemma 2 proof (line 541): "Details omitted" for projected dynamics construction
- Final convergence arguments in several proofs are hand-wavy