A Computational Study for Bilevel Quadratic Programs using Semidefinite Relaxations

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Highlights

- We consider bilevel quadratic problems with binary variables in the leader and convex quadratic follower problems.
- We derive equivalent Mixed Integer Linear Programming formulations. Thus, we compute optimal solutions and upper bounds.
- We transform the bilevel problems into binary quadratic programs and derive semidefinite relaxations.
- The particular case where the follower problem is formulated as a linear program is also considered.
- The SDP bounds are significantly tight. Finally, they are obtained at low computational cost.