

**A downside risk-averse model based on possibilistic lower partial moment for
fuzzy random linear programming problems**

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ABSTRACT. This paper considers new downside risk-averse models for linear programming problems with discrete fuzzy random variables. Through the new downside risk measures, possibilistic lower partial moment (PLPM) models are constructed by incorporating possibility and necessity measures into classical lower partial moment. It is shown that the problems involving both fuzziness and randomness are transformed into deterministic polynomial optimization problems, which can be solved by using techniques of semidefinite programming relaxation or some meta-heuristics.