

**Moitra, Bhola Nath; Pal, Bijay Baran**

**A fuzzy goal programming approach for solving bilevel programming problems.** (English)

[Zbl 1053.90540](#)

Pal, Nikhil R. (ed.) et al., Advances in soft computing - AFSS 2002. 2002 AFSS international conference on fuzzy systems, Calcutta, India, February 3–6, 2002. Proceedings. Berlin: Springer (ISBN 3-540-43150-0). Lect. Notes Comput. Sci. 2275, 91-98 (2002).

**Summary:** This paper presents a fuzzy goal programming procedure for solving linear bilevel programming problems. The concept of tolerance membership functions for measuring the degree of satisfactions of the objectives of the decision makers at both the levels and the degree of optimality of the vector of decision variables controlled by the upper-level decision maker are defined first in the model formulation of the problem. Then a linear programming model by using a distance function to minimize the group regret of degree of satisfactions of both the decision makers is developed. In the decision process, the linear programming model is transformed into an equivalent fuzzy goal programming model to achieve the highest degree (unity) of each of the defined membership function goals to the extent possible by minimizing their deviational variables and thereby obtaining the most satisfactory solution for both the decision makers. To demonstrate the approach, a numerical example is solved and the solution is compared with the solutions of two other fuzzy programming approaches studied previously.

For the entire collection see [\[Zbl 0988.00084\]](#).

**MSC:**

[90C70](#) Fuzzy and other nonstochastic uncertainty mathematical programming

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