Jitka Dupačová

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Jitka Dupačová has been a pioneer in stochastic programming since the 1960s. Her influential work in *minimax* solutions of stochastic programs (SPs) was both fundamental and indicative of her work to come. The minimax approach recognizes that distributional information is usually incomplete, and proposes a practical method to analyze the potential consequences. The minimax framework has subsequently been pursued by numerous researchers to this day, e.g., in developing bounds under limited moment information.

With similar motivation she later developed the *contamination* technique that allows stability and post-optimality analysis of an SP under a separate contaminating distribution. Like the minimax approach, the contamination technique is elegant, simple to employ, applicable in very general settings, and has strong theoretical roots and implications. Furthermore, the technique works naturally in both two- and multi-stage problems.

Jitka Dupačová has made important contributions in asymptotics (including work with R. Wets) and scenario selection/reduction (including work with W. Römisch, G. Consigli, and S. Wallace). She has extensive work in application: economics and finance (including work with M. Bertocchi and a textbook with J. Hurt and J. Stepan), water resources management (including work with Z. Kos, A. Gaivoronski and T. Szántai), and industrial processes (including work with P. Popela).

Jitka Dupačová continually makes connections, between both people and ideas, and furthers the careers of young researchers. She hosted the 4th International Conference on Stochastic Programming in Prague in 1986. She has made connections between multi-stage SP and stochastic dynamic programming, between SP and robust statistics, and between SP and parametric programming. Throughout her career she has written multiple surveys (the first in 1967), state-of-the-art assessments, and other reflective papers in the field of stochastic programming.

Selected Contributions

- “On minimax solutions of stochastic linear programming problems,” *Časopis pro Pěstování Matematiky*, (1966)
- Stochastické lineární programování *Ekonomicko-Matematický Obzor,* (1967) (in Czech).
- “Stability in stochastic programming with recourse: estimated parameters,” Mathematical Programming, (1984)
- “Stability in stochastic programming with recourse: contaminated distributions,” *Mathematical Programming Study* (1986)
- “Asymptotic behavior of statistical estimators and of optimal solutions of stochastic optimization problems,” (with R.J-B Wets) *The Annals of Statistics* (1988).
- “Stability and sensitivity analysis for stochastic programming,”*Annals of Operations Research*, (1990).
- “On non-normal asymptotic behavior of optimal solutions for stochastic programming problems and on related problems of mathematical statistics,” Kybernetika, (1991).