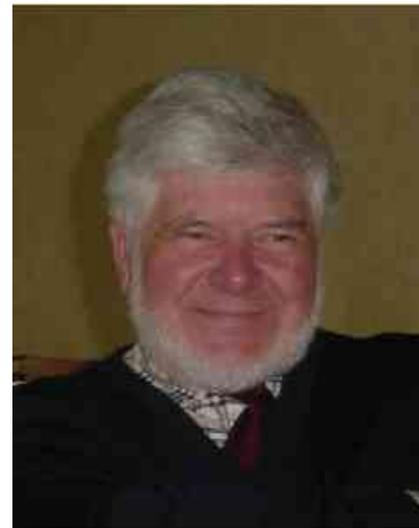


# Roger J-B Wets

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Roger J-B Wets has been a major force in the development of stochastic programming from the very beginning. Initially, he presented work on model classes and properties of these classes (particularly with David Walkup), and basic algorithmic approaches for solving these models -- particularly the L-shaped method (with Richard Van Slyke). His early work on underlying structures (with Christoph Witzgall) later lead to many algorithmic developments and preprocessing procedures.

He introduced the explicit recognition that non-anticipativity could be expressed as constraints, later leading to the progressive hedging algorithm (with R.T. Rockafellar). This has two major advantages -- it makes it possible to use tools developed for the deterministic version of a problem, and it appeals to people who are accustomed to scenario analysis. For this reason, it is particularly useful for explaining the difference between stochastic programming and sensitivity analysis (and the like) from deterministic optimization.

Roger Wets has also examined statistical properties of stochastic optimization problems, generalizing the law of large numbers, justifying the use of sampling in solving stochastic programs. He was instrumental in the development of epi/hypo-convergence, important for discussions of convergence, approximations and also sampling. His book on *Variational Analysis* (jointly with Terry Rockafellar) was awarded the Lanchester Prize in 1997. Prior to that, he received the Dantzig Award from SIAM/MPS in 1995.

Throughout his career, Roger has been involved in applications of stochastic programming. His first large, and well-known, application is that of lake eutrophication management in Hungary (with L. Somlyódy). This work was carried out during his years at IIASA in Austria. During those years, Roger helped develop the Stochastic Programming community by promoting collaboration between researchers from the former Eastern block nations, and those from the West. Thus stochastic programming found its first home at IIASA.

Roger Wets has been an inspiration for many young scientists from around the world. He has always been generous with his ideas, and helpful towards all that seek his advice. Several of his students have later established themselves in the field.

## Selected Contributions

- Algorithms for frames and lineality spaces of cones (with C. Witzgall). *Journal of Research of the National Bureau of Standards – B 71B* (1967).
- Stochastic programs with recourse (with D. Walkup). *SIAM Journal on Applied Mathematics* 15 (1967).
- L-shaped linear programs with applications to optimal control and stochastic programming (with R. Van Slyke). *SIAM Journal of Applied Mathematics* 17 (1969).
- On the relation between stochastic and deterministic optimization. In A. Bensoussan and J.L. Lions (eds.) *Control theory, numerical methods and computer system modeling*. Lecture Notes in Economics and Mathematical Systems, Springer Verlag 107 (1975).
- Stochastic programming: solution techniques and approximation schemes. In *Mathematical Programming: The State of the Art (Bonn 1982)*. Springer-Verlag, Berlin-New York (1983), 566-603.
- Asymptotic behavior of statistical estimators and of optimal solutions for stochastic optimization problems (with J. Dupacova). *Ann. Stat.* 16 (1988).
- Scenario and policy aggregation in optimization under uncertainty (with R.T. Rockafellar). *Mathematics of Operations Research* 16 (1991).

