

## Universal and Asymptotic Confidence Sets in Stochastic Programming

Random approximations of decision problems come into play if unknown quantities are replaced with estimates or for numerical reasons. Hence there is the need for methods that help to evaluate the goodness of the solution of the approximate problem. We will consider constraint sets and solution sets of decision problems and derive confidence sets which are obtained as suitable neighborhoods to the corresponding sets of the approximate problems.

The main tool are assertions about convergence in probability of random sets supplemented with convergence rate and tail behavior function. Results of that kind can be proved under certain quantified convergence assumptions and knowledge about the growth behavior of objective and/or constraint functions of the true problem.

In the talk the method will be explained and sufficient conditions for the convergence assumptions will be provided. Furthermore we will show how estimates for the growth functions can be obtained and incorporated. At the end of the talk some topics for further research will be discussed.