Prof. Tadeusz Bednarski (1949-2021)

I first met Tadeusz at the beginning of September 1979 at the European Meeting of Statisticians in Varna (Bulgaria). He was back in Poland after completing his PhD in statistics in 1976 in Berkeley under the direction of David Blackwell and Lucien Le Cam. At that time I was just starting my PhD thesis on robust testing and I had studied Huber and Strassen (1973) results about minimax tests and the Neyman-Pearson Lemma for capacities. Tadeusz later published a paper in 1982 in the Annals of Statistics under the affiliation of the Mathematical Institute of the Polish Academy of Sciences, where he combined the concept of Choquet's 2-alternating capacity and Le Cam's experiment theory. It is a good piece of probability theory with an important implication in the (at that time) emerging theory of robust statistics. Tadeusz established himself as one of the leading researchers of this field in the former eastern bloc. One can recognize in this work the solid mathematical background of the Polish mathematical tradition and a good Berkeley education in probability and statistics.

I have been in contact with Tadeusz and other Polish colleagues ever since and I have visited several times in the eighties the Stefan Banach International Mathematical Center in Warsaw. Tadeusz visited Switzerland several times, in particular in 1992 in Ascona, where we organized a meeting on robust statistics. His paper, published in the proceedings of the meeting, summarizes nicely his other important research direction, namely the role of Fréchet differentiability in robust statistics. In the robust statistics literature, it has been long thought that Fréchet differentiability would be a too strong condition to satisfy for a robust estimator (unlike the weaker Gâteaux differentiability). Tadeusz proved that this is not the case and that Fréchet differentiability naturally leads to stable estimating procedures and uniform convergence in neighborhoods of a model distribution. These results were applied to inference problems for the proportional hazards model, the estimation of variance components in interlaboratory models, and the estimation in the generalized Poisson model. They are also the basis for the validity of bootstrap procedures.

I last saw Tadeusz in Wroclaw the first week of November 2018 during a visit for a research project with Prof. Malgorzata Bogdan. We had interesting discussions on scientific and more general topics and he was insightful and humorous as usual. With his sudden death, we miss a brilliant colleague and a good friend.

References

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