

# THEORY OF PROBABILITY

GUNDORPH K. KRISTIANSEN

## Steutel's conjectures.

Professor Christian Berg told me about a conjecture of Professor Fred Steutel on infinitely divisible measures. Would I please prove it.

I succeeded after some time and subjected the manuscript to close scrutiny by several mathematicians at the university of Copenhagen. Next, to the scrutiny of a referee (probably not one of the above). It was published as [1].

As usual, my proof was complicated and more “brute force” than anything else. I suppose that a more natural proof exists.

I then was told that a generalized version of the conjecture existed. As far as I remember, it was not too difficult to prove that the generalized conjecture was false. It was a great help that I could check a discrete analogue of the conjecture by means of my private computer (an Amiga 500), if I only had a little patience (a typical calculation took a day and a night). The results of these calculations showed me what type of breakdown of the conjecture I should look for.

I published the counterexample (as [2]) in the journal where the conjecture was first proposed.

Professor Steutel asked me if I could solve a problem that he and Professor Bondesson encountered when writing the paper later published as [3]. The problem was not quite easy to solve. My solution was not completely satisfactory (as usual it was complicated) and was not in toto included in the paper. So I found it natural to publish it here.

## REFERENCES

- [1] G. K. Kristiansen, *A proof of Steutel's conjecture*, Ann. Prob. **22** (1994), 442–452.
- [2] ———, *A counterexample to a conjecture concerning infinitely divisible distributions*, Scand. J. Statist. **22** (1995), 139–141.
- [3] L. Bondesson, G. K. Kristiansen, F. W. Steutel, *Infinite divisibility of random variables and their integer parts*, Stat. Prob. Lett. **28** (1996), 271–278.