

Proposal to IEEE Information Theory Society for

Sponsorship of the IEEE Press/Wiley book *Non Gaussian Statistical Communication Theory*, by David Middleton

Proposed by H. Vincent Poor and John B. Anderson,

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This is a proposal for sponsorship by the Society of the forthcoming book by David Middleton, a long time researcher and pioneer within the Information Theory community in detection, stochastic process and communication theory. David passed away within the last year, and spent his last years on this ambitious book. The project was under contract to IEEE Press (now administered by Wiley), and was planned to appear in its series on Digital and Mobile Communication. David managed to finish 10 chapters, which we estimate at 450 pages in book form. These chapters form a valuable book in themselves, and the present plan is to include a Foreword by Vincent Poor and a bibliography of David's life work. Assistance in the project will be provided by Dr. Leon Cohen. We propose that the Information Theory act as sponsor of the book. This could take many forms, some of which are given below. While IEEE Press will publish the book in any case, sponsorship by the Society will promote the book and increase sales, which will have the effect of reducing the book's price and spreading his work. It will also honor David's memory and give the Society a proactive role in promoting the fields of its work.

A Description of the Book

The book is the modern counterpart to Middleton's classic *An Introduction to Statistical Communication Theory*. It particularly emphasizes physical channel models in space and time, and the corresponding impact of those models on detection and estimation procedures. It is comprehensive in the material it covers, and perhaps could only have been written by Middleton, who did much of the work that is described therein. Somewhat unusually for books in our field, it appeals to physics a lot, which we think gives it a particular place in the literature of the field. There are many problems, notably in the analysis of communication channels, where a more physically realistic approach can be of considerable value. This has been an issue, for example, in the analysis of the capacity of ad hoc networks, where the physical model has a major impact on fundamental limits. Our feeling is that the book will be of interest to a sizable part of the ITS membership. Moreover, it will be a useful reference for others and direct public attention to fundamental, high quality work in a field within the charter of ITS.

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Modes of Sponsorship

There are many possibilities, and a sponsorship can be negotiated that meets the wishes and finances of the Society. Sponsorship agreements with other IEEE societies in the past have included one or more of the following features.

- Sales by the Press to ITS members at a reduced rate, in return for ITS help with book promotion. This can be e.g. free advertising in the Transactions, Newsletter or website.
- Kickback of royalties (most often 2%) to the society, in return for the above promotional assistance.
- Bulk book purchases at a significantly discounted rate, distributed in some way by the society.
- Appearance of the ITS logo on the book cover.

A bulk purchase is helpful to the Press, but a society's agreement to actively promote the book to its members is more meaningful with a sizable, respected society like ITS.

We recommend a combination of the first two features; that is, ***cost free promotion in the ITS publications, in return for a reduced price to ITS members and/or 2% royalties.*** The cost to the Board of Governors in money and effort will be minimal, and a profit to the Society is possible.

Contact Addresses

The IEEE Press/Wiley editor for this project is Taisuke Soda, tsoda@wiley.com, Senior Editor, John Wiley&Sons, 111 River St., Hoboken, NJ.

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John B. Anderson, anderson@eit.lth.se, is Professor of Communication Engineering at Lund University (Sweden), editor of the Series on Digital and Mobile Communication, and IEEE Press Liaison to the Information Theory Society.

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