The reader who is not reasonably familiar with functional analysis will need to have copies of standard texts close to hand. Nevertheless, the chapter on Hilbertian kernels is one of the very few monograph sources in any context on this important subject.

The final third of the book is devoted to extending the introductory material. Here the reader is exposed to recent work on spline functions on convex sets in which the basic problem is minimizing $\|\iota x\|_Y$ over $\{x \in X: \iota x \in C\}$ where $C \subset Z$ is a closed convex set. Also covered are box-splines, B-splines, and simplicial splines, together with an interpolated chapter on spline manifolds which occur in minimizing quadratic energy functionals found in acoustics, elasticity, and the like.

Grace Wahba [2] opines "*... that the effort to master the basic properties of [reproducing kernel Hilbert spaces] ... will be worth the effort.*" Unfortunately the technical deficiencies of the book, having to do with editing and the lack of an index, make the effort harder than is necessary. However, the material Atteia presents is important, well worth knowing, and naturally appealing.

References

1. M. Golomb and H. Weinberger, *Optimal approximation and error bounds*, *in* "On Numerical Approximation" (R. Langer, Ed.), pp. 117–190, Univ. of Wisconsin, Madison, 1958.
2. G. Wahba, "*Spline Models for Variational Data*," SIAM, Philadelphia, 1986.

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D. S. Mitrinović, J. E. Pĕcarić and A. M. Fink, *Classical and New Inequalities in Analysis*, Mathematics and Its Applications (East European Series) Vol. **61**, Kluwer Academic, 1993, xvii + 740 pp.

This is a large book about inequalities in analysis. It is 740 pages long, has over 1000 references, and is broken into 30 more-or-less self contained chapters. These chapters have titles like "Bessel's Inequality," "Norm Inequalities," and "Shannon's Inequality." The typical chapter consists of many inequalities, a few proofs, some discussion, some history and references. The intention is that the chapters can be read by themselves and while there is some cross referencing, it is kept to a minimum.

In the introduction the authors ask: "*... why another book on inequalities?*" and offer two answers: "*First, there are many recent refinements of these inequalities and connections between the various ones that have not been noticed before. Secondly, many inequalities are proved over and over, mainly because mathematicians are unaware of the previous history ....*" They add: "*It is our purpose to address these issues by attempting a comprehensive study of the publications devoted to inequalities.*"

This is an ambitious book. It should also be a useful book, primarily as a "handbook" of inequalities, a reference book for the working mathematician, engineer, or physicist who actually needs an inequality. While it would be possible to study out of this book, I suspect that this will not be its major use. It is possible that this book will become a standard reference. The only serious competition is "Inequalities" by Hardy, Littlewood, and Pólya, and this book, while it has aged well, is 60 years old. I also suspect that it will take time to measure the real utility of the book. There is a wealth of material, but it takes some practice to find things. A serious shortcoming is the lack of an index. The only index is a names index, there is not even an extended table of contents. A second serious shortcoming is the price. At $285 U.S., it is unlikely to appeal to the casual user.

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