

Preface to the Second Edition

Almost 30 years have passed since Volume I appeared. Much has changed. I am retired. I am happy to have had 25 PhD students. My POSSLQ is now called a partner. I am not using a typewriter. You may read the book as an e-book on a tiny tablet. I have. More women receive PhDs in mathematics in the United States and go on to become full professors at top universities. Obama is president. Yeah!

Some things, however, never change. Basic mathematics is as it ever was. The average person in the United States thinks of a mathematician as someone who can balance his or her checkbook. Publishers, bookstores, libraries, and universities are in trouble. My country is still involved in too many horrible wars.

I tried not to change much in the first edition. I made the corrections I knew about and added some updates on new developments in harmonic analysis on symmetric spaces, keeping myself to those developments that fit in with the spirit of the original. No adeles here! I also added a few figures drawn by Mathematica or Matlab. Again, though I will correct what I know of errors in the first edition, new errors may have been introduced in TeXing the old book. And, yes, I am still bad at proofreading. So reader beware!

Many advances have been made since 1985. We now have Mathematica, Matlab, Sage, Scientific Workplace, Google, Wikipedia. We can post math. papers on the web and people all over the world can read them. No more mailing of poorly typed preprints. But sadly, also, no more handwritten letters. Computers with the power of the supercomputers of yesteryear are now on our desks or even in our purses or jacket pockets. *Star Trek* communicators look clumsy compared with our cell phones.

In the new parts of this second edition, I will discuss wavelets, quasicrystals, modular knots, and also provide a glimpse at the way in which modular forms appeared in the proofs of some of the oldest conjectures in number theory. I will also consider finite analogues of symmetric spaces and their applications in computer science—Ramanujan graphs.

Finally, I thank the makers of Scientific Workplace for making it easier for me to deal with this book.

Encinitas, CA

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Harmonic Analysis on Symmetric Spaces—Euclidean
Space, the Sphere, and the Poincaré Upper Half-Plane
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2013, XVII, 413 p. 83 illus., 32 illus. in color., Hardcover
ISBN: 978-1-4614-7971-0