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**Naveen Somasunderam\*** (somasunn@oregonstate.edu). *Harmonic analysis on the  $p$ -adic unit ball.*

The  $p$ -adic fields play a central role in modern number theory, and hence the behavior of sequences over these fields are of considerable interest.

We show how fourier analysis on the circle can be extended to the  $p$ -adic unit ball  $\mathbb{Z}_p$ , and use it to analyze the behavior of sequences.

The techniques we consider are easily accessible to undergraduates who have taken a semester of advanced calculus and algebra. We shall conclude with some interesting open questions. (Received September 18, 2018)