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Palle E.T. Jorgensen* (jorgen@math.uiowa.edu), Department of Mathematics, The University of Iowa, Iowa City, IA 52242-1419. *Multiresolution wavelet filters as quantum gates.*

We show how the multiresolution approach is a special case of a “quantum gate” as they occur in quantum computing algorithms. They also may be understood from a certain loop group approach, but it is the set of loops that parametrizes the wavelet filters, which in turn correspond to irreducible representations of a set of operator relations that are frequently studied in operator algebra theory. The talk will be based in part on the paper ”Minimality of the data in wavelet filters”, preprint, 2000, by Palle E. T. Jorgensen (submitted). (Received August 03, 2000)